Quebec, Canada E.
July 26th 1859

My dear Sir,

I had the pleasure of receiving two days ago after a short visit to Montreal your parcel of plants. At present I have only made a cursory inspection of them but I see they contain many plants of great interest and some few that I have never seen before. I am examining them with as little delay as possible and return them at the time to be returned with care. I think Dr Torrey told me that he had published descriptions of some of these grasses and a very few: he assumed

[illegible] is
[illegible] to
[illegible] specimen
[illegible] may be,
[illegible] so and
[illegible] time expen-
[illegible] by making
[illegible] to examine
[illegible] them carefully
[illegible] I

the a tree that he had is named amount which was Wright 708. which I had provisionally named Cuticane fanosa and which he titled me was Chondrus fenestrum Poiry a Brazil species which and then is identical with your number 130 & 131 which I see you named Mont. bona exposita Pom. I should therefore be very glad indeed to obtain a copy of these Papers of Montagne if you of needfully increasing names.

I cannot think that Ulvaceae belongs to Hydrocaria altho' I see that a few instances to shows are it with order to be checkers but the fact is quite sufficient for Hydrocaria and I consider the plant to be very closely allied to Ectocarpus and very near to Wright 702. which I have provisionally called Ectocarpus participiata is Mr Newham

Your No. 118. is decidedly Aunedo Bonax L. which uses for every part of the world. I must have examined upwards of 100 sheets I should think of it is Mr. Harvey. Nice de

Bonax amandaceus. R de B.

Aunedo Bonafidensis. Mont.

Amphidenus Nordhalensis Ch. et P.

Aunedo ramulosa. Sagrement

Aunedo Bofanis Mr. Mont.!

Your No. 180 is Lobium terminalium L. Harv.! these lots to numbers & the number numbers are placed in the same sheet. The sheet is one sheet: is marked L. arcuosa by Smith and bears I suppose to expression in nature. Have specimens contained with them, for Mont and for Mont.

These few I identified to me and I will write about others as I can decide a time.

Believe me

Yours very truly

William Mason

Finished with. Can then so expense in my letter, so and time expense by my letter to communicate this in every manner I

1st 1859.

Quebec.
February 4th 1859.

My dear Sir,

I have at last finished all the grasses you entrusted me with. I am very sorry that I should have kept them so long but very many of them were entirely spoiled and with many of them I found it necessary to begin to work up the whole genus and this as you know takes up much time especially when that time can only be had by snatches. I have been very much interested in the examination and am proud of the handsome contribution many of them make to my herbarium. Tomorrow I

I will dispatch the hamper to your address containing all the plants you wished to be returned and I have added some few duplicates from my own herbarium which I think might have some interest for you. I am sorry they are not more valuable and more numerous but travelling so much about the world as my brother compels me to do, I have of course been compelled to take as few duplicates as possible about with me. Some few of the Gibraltar and Canaries grasses are all I think pretty interesting. You mention in your note that you had heard from Dr Gray that some expected new grasses from you & Dr Parry. May I ask by saying so was that one of the officers of my regiments who had the pleasure of seeing Dr Parry in N. York told me that Dr P. had stated that he intended to send a hamper to me by that officer but that it had not arrived when Mr Cathcart left N. York. I am afraid I cannot have the pleasure of adding anything of value to your collection of autographs and portraits of botanists. When I return to England I will endeavour to do so & should most value the portraits on account. There is one portrait of myself which are of a sample in the Canaries by Pitton.

I should esteem most any matter about Mediterranean plants as I feel doubtful about so many of them and I take when I return to England to bring out a pamphlet on species Gramineae as one of a series of the various international herbaria. In an-

Ventricle original specimen. Pray give my kind regards and compliments to Dr Percy and with the same to yourself

Believe me,

Yours very truly

William Marcet.

Dr Gray was good enough to send me a copy of Mr Whipple's that I have with Murray & Marcet's report and I have in consequence been delighted of one of Parrot's species. If at any time you are sending any parcel I should be much obliged if could share me a small of Perkins's charity. Under that I should know and believe unfeigned.

Sir:

Thuarbers Gramineae.
Phalaridieae

1 to 5 are all Phalaris intermedia Bosc:

6 & 7 are Setaria centrinodes H.B.K. I do not consider there is any distinction between Setaria and Hexasthena, they both decidedly belong to Phalaridieae. Mr. fig VII t.s. is a remarkably good one. That [illegible]

# Munro's Notes.

pages 1–11.

[illegible] were omitted by the callous portion of the spicula. Prich: was published by Hunt in 1815 and therefore must take precedence of Holcus published by Rich: in 1820.

is Panicum (Echinochloa) crus Galli. L. not P. colonum.

is Setaria Italica. P. de B. with the rice smoother than I have ever previously observed it. It looks very like a cultivated form of S. viridis.

Hunter 7 L 1044

No 1 – Phaluris, Gila, Schott.
2 & 3 ——— 1794 Berlandr & 2440,
4 ——— Rio Sta Maria, Bigel.
5 ——— California – Fitch
6 Phaluris – 1638 Coulter.
7 ——— Rock Creek Bigel.
8 Cenchrus – Rio grande Schott
9 ——— 1434 Berland.
10 Antiphora? ———
11 Leptopogo H.
12 ——— Presidio del Norte Bigelo
12 bis Pappophorum – Pecos Bigel
13 ——— distichum Thurb –
14 ——— Bigelow.
15 Enochlora. Torrey
16 ——— Thurber
17 Panicum colonum? –
18 Setaria Italica Bigel.

# Thuarbes Gramineae.

## Phalaridieae

Nos 1 to 5 are all Phalaris intermedia Bosc:

6 & 7 are Hilaria cenchroides H.B.K. I do not consider there is any distinction between Hilaria and Hexarrhena, they both decidedly belong to Phalaridieae. Mr's fig VII t.3. is a remarkably good one. I believe Antephora punctulata & A. Berlandieri Steud: to be thus also. Wright 758 & Lindh. 1437 are the same.

## Paniceae.

8 & 9. are Cenchrus myosuroides H.B.K.

10. is Antephora asiliflora. Steud. see note under Antephora above.

11 & 12 are Lappago racemosa. Willd: Hartwig No 258 & Lindheimer 721 are the same

12. bis is Paspalum plicatulum Michx. very near P. laeve, dilatatum, lentiferum and pumilum. Drum. No 303 & 342 are the same.

13 & 14 are Pasp: distichum. Linn. Herb.! P. vaginatum Sw.

15 is Eriochloa sericea Munro. Paspalum sericeum Schrebe. Linn. Panicum sericeum Schrebe. Steud. not Helopus pilosus Pers. which has the branches of the panicle more confirmed and has quite a different appearance. Wright 791 & 793. Lindh: 544 & Drum. 374 are all the same.

14 is Eriochloa acuminata K.th. a good species well distinguished by the unequal glumes and quite distinct from E. annulata. — Eriochloa v. Helopus is certainly a good genus well marked by the callous pointing of the spicula. Eriochloa published by Kunth in 1815 and therefore must take precedence of Helopus published by Pers. in 1820.

17 is Panicum (Echinochloa) crus Galli. L. not P. colonum.

18. is Setaria Italica. P. de B. but the seed smoother than I have ever previously observed it. It looks very like a cultivated form of S. viridis.

Setaria viridis.

No. 19 Puerto de Paysan, Bigel.
" 20 Burro Mts. —— Antisell
" 21 2095 Wright
" 22 Santa Cruz. Th.

Panicum virgatum

" 23 Rock Creek, Bigel.
" 24 Limpio " " large specimen
" 25 " "
" 26 Painted Camp. "

P. bulbosa

" 27 2086 Wright
" 28 Copper mines, Wright

P. divergens

" 29 Frontera, Big
" 30 Rock Creek. "

P. fuscum

" 31 2091 Wright
" 32 383 Drum. 797 " , 2332 " Berland.
" 33 2070, 2091 "

Pan. giganteum, Schule?

" 34 348, Drummond

P. obtusum

" 35 Santa Cruz 701 Th.
" 36 2092 Wright
" 37 Van Horne Wells, Bigel.
" 38 Rock Creek "
" 39 Laguna Colorada, " Whip.

P. leucophaeum

" 40 Rock Creek Bigel.
" 41 Sonora 448 Thurb.

Pan. undetermined.

" 42 Cibolo of the Rio Grande, Bigel.
" 43 Sonora 1021 Th.

# Thurber's Gramineæ — Panicum, continued.

Nos 19 to 22 are Setaria candata N. & Sch: Wright No 800 & Gardner 139 are the same.

Nos 23 to 26 are Panicum virgatum L. Except in 25 the vaginæ are unusually hirsute.

No 27 & 28. are I believe Panicum maximum Jacq: var. β hirtum of Pers. also P. scabrum of Lagasca No. The ligules are fringed in that respect it differs from P. maximum.

No 29 & 30 are Panicum divergens Nutt: (1817) P. cognatum Schult. (1827) and Pers: P. autumnale Bosc: (1826) P. 289. is the same.

No 31 to 33 are Panicum fuscum Sw:!

No 34 is Panicum agrostoides Mühl: differs from P. gigantenum Schreb in having the terminal flower bearded at the apex whereas P. gigantenum does seem to be glabrous. Have it as Drum? 343.

No 35. 37. 38. 39 are Panicum ottusum H. B. K. Drum? 371 & 382 and Hartweg No 344 are all the same.

No 36 is Panicum (Setaria) geniculatum Pers. This was named with the preceding.

No 40 & 41 are Panicum leucophæum H.B.K. with narrow leaves in 40 with very hirsute vaginæ in 41 smooth. The syns are numerous amongst which I include Panicum (Digitaria) filiformis Pers. a form with fewer branches to the panicle. — Lindh: 722 & 723 are the same as also Pan: Californicum Benth in Hinds Hort: All well distinguished by the much acuminated terminal flower.

No 42 is Panicum velutinosum Nees & Pers.

No 43 contains two plants. Part with pubescent spikelets is the same as No 42 and the other part is I believe a form of P. capillare L. with short peduncles very close to P. miliaceum L. & P. Texianum Mühl & Arnott. I have exactly similar specimens collected by Douglas on the W. Coast.

Stipa Mesiana

No. 44 Sep. Lindh. (S. ciliatus)

" 45 263 (1849) Wright

" 46 Wright 1848 – I5. Drum.

" 47 San Diego, Col. Parry

S. virescens

" 48 Sitgreave

S. Cimbriata

" 49 Cobre Bigel.

" 50 1997 Wright

" 50" " " dupl.

S. permata

" 51 Nimbres Th.

S. hyalina?

" 52 Painted Camp. Bigel.

" 53 1999 Wright

Stipa or Oryzopsis?

" 54 2000 Wright. (Herb. Gray)

" 55 Large Stipa, Oct 13/53 Big. Ship.

Aristida spiciformis

" 56 San Pedro Bigel.

A. purpurea

57 Rio Leon, Bigel

58. Presidio del Norte Bigel

59 2551 Berlad

60. 1777 Berlad.

61 Camp Bowie, Bigel

62 2006 Wright

63 2004 ——

64 2015 ——

65 Rio Limpio Bigel

66 293 Drum.

# Phurbis Gramineæ
## Stipaceæ.

Nos 44. 46. 47 are Stipa setigera Trest. S. Neesiana Rin: S. lemnetricola Pu. S. eriocaula Schede in Linnæa. S. bicolor a quite distinct in its longitudinally striped palea. My spec: from Lindheimer is No 546.

No 45 is Stipa eminens Cav: S. eminens H. B. K. var longe aristata, distinct from the preceding in the palea hirsute all over.

No 48 is S. viridescens H. B. K. probably a large form of S. vaseyana & S. fimbriata.

Nos 49 & 50 are S. fimbriata H. B. K. varying into S. vaseyana Trest. Coulter No 1454! or Mr. Hall's is the same.

No 51 is S. pennata? L. Rather doubtful with the palea pubescent all over. If it is S. pennata it must be very S. The lower part of the awn is more or less pubescent. Judging from a single specimen I should say it was intermediate between S. pennata and S. Szowitsiana.

No 52 is an old specimen of S. fimbriata H. B. K. The same as 49 & 50.

No 53 is S. tenuissima Rin: near to S. hyalina. Leaves remarkably scabrous.

No 54 is Oryzopsis nov: sp: or perhaps O. micrantha Rin: nob: Mr. Parish.

No 55 is Stipa viridula. Rin: I have seen it from Carlton House Park (Brown?) Morley Wm (Geyer No 146.) California (Coulter No 745.)

No 56 is Aristida subspicata Rin:, Helice, Scribner & small scrap in comparison from Galapagos Isl: the only piece I have, lost.

Nos 57 to 61 & 63 & 66 are ordinary forms of A. purpurea Nutt: Brown? No 293! & 304! Wright 743! & Lindh: 562! which is A. equisetina Schede are the same.

Aristida purpurea.

67 - A. pullens Trin.

68 - var. Bermudiana Thurber.

69 Cobra Bigel.

A. scheidiana Off

70 - Cobrae Bigel

71 Longiana Colorada Big Whip

A. scheidiana

72 Cooks Spring Bigel

73 Cobra. H. Ergotina Big.

A. reflexa?

74 Big Whip.

Undetermined

75 Tulare Valley. Blake. Hall Tor.

A. dispersa?

76. Fort. Grant. Rug. Thomas

A. Californica

77. Colorado Desert. Schott. A. Tor.

# Thurber's Gramineae. Stipaceae continued.

No. 62 & 64 A var of A. purpurea with few flowers and very long awns and are the same as A. Lindh: 563! which is A. Mexicana. Schede.

No. 65. The same form with the palea remarkably scabrous.

No. 67. A more doubtful form as the palea is unusually glabrous.

No. 68 & 69. Seem at any rate a good variety distinguished by the very short pedicels. They are A. Pendleriana Steud: Stone Pendler. No 973 and have called it in Hb. Boulton A. nov: sp: near A. digantea Pendler 978 which Steudel calls A. longiseta as the same plant.

No. 70 & 71 Aristida Schiedeana. Trin. & Rupr. They are also very close to A. longiseta var orsadicea and A. complanata.

No. 72. A. Schiedeana Trin. & Rupr. By my notes I see that Wright 748! in Hb. Boulton was also A. Schiedeana

No. 73. Probably also I suppose A. Schiedeana. It seems also to come very near to Aris. (Stipagrostis) tenuis H.B.K. Very probably No. 70 to 73 are all the same. I have examined them carefully but have been much puzzled.

No. 74. A Aristida divaricata H.B.K. as Sundevall and that plant. Very close to A. longiseta Trin: Wright 742! and Pendler 974! I consider the same.

No. 75. Differs from A. Humboldtiana in not having a twisted apex to the flower. The glumes very considerably. Approaches very closely to A. terniseta Cavan with the lateral setae longer than there described.

No. 76 is A. dispersa Trin: but it ought to be called by one of Nuttall's names. No 740 of Wright is the same.

No. 77. Aristida (Arthratherum) nov: sp:.

Lycium phleoides

78 Bigel. Cobre

Vilfa tricholepis

79 Whip

80 Cobre

Vilfa utilis

81. Pedro pinto Bigel

V. utilis var?

82 Cooks Spring. Bigel.

V. filiculmis

83. Oryzopsis hymenoides Big. Whip.

83 1973 Wright.

Sporobolus

85 1976. Wright.

86 S. cryptandrus

Hunt.

87 Cooks Spring. Bigel

88 Upper Republican English

S. cryptandrus

89 Bigelow

Hunt.

90 — 1980 Wr.

91 Agrostis perticultata

Hunt.

92 A. Scabra

93 — Cobre } Bigel

94 — Tucuilres }

# Thurber's Gramineæ. Agrostideæ.

No. 78 is Lycurus phleoides H.B.K. Wright 750! is the same. In Herb. Princ. Coll. Dublin Coulter 1148 is L. phalaroides

No. 79 & 80 are Vilfa trichodes Thur. a good species near V. plumbea Pin. Pl. pedicel conspicuously hairy. The panicle varies much in shape from nearly globular to an oblong ovate form

No. 81 is Vilfa utilis Thur. Same as Lindh. No. 559.

No. 82 is Vilfa rufens Pinn. in my opinion the same as Wright 744! and my dose to of ash identical with V. geniculata of which I have a specimen from the Columbia.

No. 83. Vilfa filiculmis Thur. A good species very close to V. pachystachya Munro. Kelly differing in size and having hairy pedicels in which respects it approaches V. cuspidata. It appears almost intermediate between V. plumbea & V. pachystachya and perhaps indicates that several of the supposed species of this division of Vilfa or Sporobolus ought to be combined.

No. 84 is Cinna macrura H.B.K. a var. with the callus perfectly smooth. The presence of a callus separates it from Vilfa.

No. 85 is Sporobolus uniol.: near S. pulverulens. S. Wrightii Munro in Herb. Lindl. distinct fr. S. cryptandrus. Upper pedicel turning divided in fruiting

No. 86 & 87 are Spor. ramulosus H.B.K.

No. 88 is Spor. asperifolius Nees et Meyen. Same as Wright 737!

No. 89 & 90 are Spor. Coromandelianus H.B.K. non Pin. S. commutatus Kunth & Pin.

No. 91 is Spor. cryptandrus A. Gray nondum expansa. Same as Wright 728! & Lindh. 724!

No. 92 is Agrostis verticillata Vill.

No. 93 & 94 are A. exarata Pin. The same as A. asperifolia, A. hallens and A. Schiedeana Pin. In 93 the glumes are hirsute all over. Pringle No. 962 is the same.

Arundo.
118 Lion Eagle Pop. Byd
Pappophorum Boreale
119 Peter Sun Redro & Bounds Sp. Byd
P. mucronulatum
Month of Roos Byd
120 - Cotton pappophoroides
Ojo Culiente Jh.
121 R. Sens
122 Bigelow
Cutesheeum prostratum
123 - Sonora Shrub.
Chloris alba
124 - Big. Whisp.
125 C. verticillata
Muncy
126 Mu - Shrub.
Coronadia Sp. Byd
127 C. Gregii
128 Cabolo of Rio G. Byd
C. latifolia
129 2025 Wr. H. Tour.
Bouteloua oligopoda
130 Big Whisp
131 Presidio Big.

Thurber's Gramineae. Arundineae. Paspaleae 7. and Chloridineae.

## Arundineae

No. 118 is Arundo Donax L.

## Paspaleae.

No. 119. is Paspalum (Eucaspagus) breale. Led: Wright 751! is the same altho' it has the third flower. In Hb. Nuttall I have called it P. platicum Nr. and I believe they both are P. plicatum Hnd. Nutrit.

No. 120 is Pasp: (Rhytachne) unisol: apertum Munro in Hb. Nuttall: Same as Wright 803! Not P. mucronulatum which is particularly described by Pursh as having the awns only as long as the glumes.

No. 121 is "Ottea Paspaloides" Nuttall.

No. 122 is a new Genus unlike any I know. Spicules 4 flor: 2 infer & 1 or 2 supra def. fructus terter sdi fertile.

No. 123 is "Calhestecum prostratum Nutt." This belongs to Chloridea and comes very close to Melanocenchris Arcas. The Genus requires considerable alteration in description. Glumes of the lower flower very unequal, upper one scarcely visible. Lateral anthers of the fertile only are fertile. Upper fertile as large as the lower. In upper and sterile flowers the glumes are quite as unequal and certainly have not plumose anthers &c &c.

## Chloridea.

No. 124 is "Chloris alba." Nutt.

No. 125. 126 & 127 are "Chloris verticillata" Nutt: Leadheimer 730! is the same.

No. 128. is Leptochloris Greggii. Same as Wright 764! I considered this a new Genus and called it Leptochloris in Hb. Nuttall! & Hb. Hooker! but the name is not published.

No. 129. I called Leptochloris latifolia Munro in Hb. Nuttall! & Hb. P.C.D. You have I observe adopted the same specific name. Nr. Wright 763!

No. 130 & 131. "Bouteloua eriopoda Torrey" Same as Wright 748! Bouteloua lanosa Munro in Hb. Nuttall: Dr. Torrey on looking over my Gramineae tells me this was Chondrosium geneum Torr: in Emory's Report.

Muhlenbergia glomerata
95 Muhlen. Bigel
M. virescens
96 - Copper Mines Bigel
M. Berlandieri
97 Wild Sore Eyes } Bigel.
98 San Pedro } Bigel.
M. debilis.
99 Hunt.
M. gracilis
100. Big Whipp.
M. Calamagrostidea
101 1985 Wright
102 731
103 - Mex. Berkinow.
M. Jergana
104 - Hendofsan Pedro Bigel
105 Rains near Concho
106 734 Wright
107 Rio G. near San Diego Big.
M. gracillima
108 Big. Whipp.
M. distichophylla
109 1990 Wr
110 Colre Bigel
Epicampes gracilis
111 Rio Leon Bigel
Muhlen. undetermined
112 Colre Oct. 12. Bigel
113 Painted Cave
114 Colre Oct. 23/61
115 - Painted Cave
117 165-6 Coulter.

# Muhlenbergia Gramineae. Agrostideae continued.

No 95 is Muhlenbergia glomerata Pur. of diffuse and much branched growth.

No 96 is M. sericeus Pur. I suspect altho' it differs from his description in having the glumes nearly equal, the branches of the panicle shorter and the leaves broader and much longer.

No 97 & 98. M. Berlandieri Pur: More scabrous than usual.

No 99 is M. debilis Pur:

No 100 is M. gracilis Pur: A var with the palea remarkably scabrous.

No 101 is M. calamagrostidea Nutt var setâ brevior No 112 is the same.

No 102 is M. sylvatica Torr var longiseta glaucescens foliis: angustis. Dr Hitchcock I have called it the var: of: racus M. sylvatica – Parry's specimens rather different with more obtuse glumes. No 115 is the same.

No 103 is M. calamagrostidea Nutt & M. longiseta Vault:

No 104 to 107. M. Texana. Number. A good species apparently widely spread in Texas

No 108 M. gracillima. Torrey.

No 109 & 110 M. distichophylla Nutt No 109 is a var: with long awns. In 110 the upper part of the spike is almost muticous. Weight 730! is the same.

No 111 Oligantes gracilis Pers. I am inclined to think this is also M. distichophylla. a small muticous form is present. The palea are very obtuse. I doubt think Oligantes is a good genus.

No 112 is the same as 101.

No 113 is M. sylvatica Torrey

No 114 is M. near M. Berlandieri Pur. Too imperfect to be certain of the species but it differs from M. Berlandieri in having the palea scabrous only towards the top and the glumes more scabrous.

No 115 is the same as 102.

No 116 is Sporobolus ramulosus Nutt var glumis non nunquam pilosis

No 117 is Agrostis aristatus Nutt Sch: with the awns unusually long.

Aug 7th 1849

Bouteloua trifida

132 M— 2022 Wr,
B. polystachya

133 Arroyo Cotolo Brigs
134 Burro Mts, —
135 — Presidio del Norte —
136 Sonora, Th.
B. trichostachya

137 Rock Creek Brig
138 Camp of Valley of Death —
B. aristidoides

139 Burro Mts Brig
B. chondrosioides

140 Sonora Th.
141 Tubac Kelly,
B. filiformis

142 Puerto de agua Schott,
B. polystachya

143 — Big Muff,
144 Puerto de Reyes Brig.
Neuroplis fasciculata

145 Frontera Fr. Brig,
P. rigidum

146 Fort Yuma, Maj Thomas,
Leptochloa dubia

147 Puerto de Reyes Brig
148 Rock. Cr. Brigs
L. filiformis
Rio G. Schott.
150 Sonora 1886 Thurber,

205 766 Wr
207 Cooks Spring Nov 3/51. Brigs
208 Colorado Cotton Schott Hog.

# Plumbeis Gramineæ. Chloideæ, continued.

No. 132. "Boutelona uni. sl." Cutriana Wrightii Munro in Hk. Bentham: Same as Wright 749!

No. 133 to 136. "B. polystachya Pom." Same as Wright 754! & Cuttler 792!

No. 137 & 138 "B. trichantha Plumbes" Same as Wright 752! Cutriana submutica. Munro: & Hk. Bentham

No. 139 a "B. arcuatodivides" Same as Wright 757! Cutr. arcuatodivides Hunth.

No. 140. 141 & 142 are all in my opinion Cutriana juncifolia Hk. They evidently vary much. See notes with 142 returned.

No. 143 & 144. I consider a species of Pleuroplis for which I suggest the name of P. monostra. See notes with 143 returned. Wright 747! is the plant in a less abnormal state

No. 145 "Pleuroplis Sanesii Pom" Same as Pendler No. 944.

No. 146. "P. rigida" I had named this as Cuttler No. 752! in Hook. Pen. Coll. Bulli. Pleuroplis lanata Munro.

No. 147 & 148 "Leptochloa dubia Nees." Cuttler No. 776! & 1440 are the same in Hook. Pen. Coll. Bulli where I have called it Bipalaxe altus-flora (Munro) Wright 767. is the same as also 207 of this collection.

No. 149 is L. fascicularis A. Gray & Thurb. Bipalaxe fusca Nees B.

No. 150 is a form & that of L. fascicularis. The awn longer than usual and the plant has more the appearance of Leptochloa fusca.

No. 205 is L. rigida Munro in Hook. P. C. O. Same as Wright 766!

No. 207 is the same as No. 147 & 148.

No. 208 is Lepto. in an abnormal state I believe. Unknown to me comes nearest to L. domingensis.

Bentham 92 – 1849

Koeleria Cristata Pers

151 – Copper Mines Bigel

Bigelovia Spicata

152 — Red River Mercy

153 Rio G. Bigel

154 Rio Gila Gr.

155 San Elezario Bigel.

Melica

156. San Diego Parry.

Bromus carinatus

157 2065 Nev

158 2067

159 2068

160 2069

Bromus?

161 Tex & C. Gr.

162 Oryzopsis Nut Bigel

Bromus?

163 Oryzopsis Nuts Bigel

164 San Diego Parry

165 Stipa Coloradensis —

166 Copper Mines Bigel.

Erianthus Mexicanus

167 Colo Bigel

E. Rosskii Nev.

168 Leucopoa Bigel

Glyceria pauciflora

169 Lagurus Stipa Mexicana Bigel

# Thurbers Gramineæ. Festucaceæ.



No. 151 is "Hordeum crinitum" Pers: a var: with narrow leaves

No. 152 to 155 are all "Brizopyrum spicatum" Hook of which the specs are very numerous. Hook: Fl: in Fl: Boreal: reduces this Genus and places it in Festuceæ and I think erroneously. The many veined glumes and palea are a very good distinctive mark.

No. 156 is Melica imperfecta Trin: M. californicoides Steud. Probably Douglas specimens are M. porcidis Nutt: of which I have no description.

No. 157 to 160 are Bromus ciliatus L. var pungens

No. 161 & 162. Poa annua L. var ramis paniculæ scabris. Pendler No 931! is the same 15 inches high. I do not know P. rigida. Ell:

No. 163 to 166 Scleropoa californica Munro in Fl: Hartw: No 2035/277. By Scleropoa I mean the genus that is uncalled Atropis and by a Gray the section Hetropoa of Glyceria. It is Bragrostis Pondleriana Steud: fide Pendler 932! I believe part of Geyer No 12 to be the same. Curtis No 782! is the same. It may possibly be Poa angustata Pursh. The structure of the palea separates it from Poa Hookeriodes.

No. 167. is Bragrostis pilifera Scheele, the same I believe as B. megalos & polytricha from Brazil. B. mexicana Trin: I suppose to be the same but the specimens are in such confusion that it is almost impossible to separate them. Lane & Wright 776.

No. 168 is Brag: delicatula Trin: Identical with some specimens from Buenos Ayres. I think it may be Poa tenella Pursh. P. Lindii Nutt & therefore may be a state of Brag: Purshii as I suspect. In some respects I find Bragrostis more liable to variety than any other Genus. Wright No 2044 named by me, fide Thurber is also named from Nicaragua mexica.

No. 169. is a new species of Scleropoa or Atropis closely allied to Sch: arenaria Steud. Palea less conspicuously veined than usual, and very generally there are only 3 nerves. The mouth of the vagina is fringed with long hairs.

Jenuth 92 - 1869

Dentromia Spicata Nu.
170 Monterey Cal. Parry
Trifolium Foliaceum
171 Lindheimer
Trichostis Mutica Torr
172 Big. Whips. Original
173 2046 Wright
174 2064 "
779 Nr -
175 Trichostis pulchella
Texas Th
176 Leon Springs Bigel
177 T. arenacea
178 781 Nr.
T. concinna
179 Leon Springs Bigel
209 Trichostis 778 Nr
210 — 426 Nr
211 — 775 Nr.
Lolium temulentum
180 Th
Triticum caninum B. Emelen
181 Spalding
181 bis ~~Coppers Mills Bigel~~ 2072 Nr.
T. repens
182 2072 Nr
183 Coppers Mills Bigel
~~184~~ Hordeum pusillum
184 El Paso Bigel

## Munro's Gramineæ. Avenaceæ. & Hordeaceæ

No. 170. is Danthonia officinalis. H. et B. see notes with plant returned.

No. 171 is Piptatherum elongatum Hitch. N. Cuma very close to P. holcoides. Pir. detes Not P. Polycarpum Hitch is a syn: of P. setifolium. This plant certainly is not allied to setifolium.

No. 172 & 173 "Piptatherum micrathum Pers." 173 has the vagina decidedly hirsute towards the top. P. cinnanthum in Hitch. numbers is indicated. Wright No. 2046 sketched for this has also been used for Lagurus delicatulus.

No. 174 is Pip. trinervigluma Munro. distinguished from the preceding by the 3 nerved upper glume. Same as Drummond No. 307. St. Herb. Lindl. Scribed this with a? Oryzopsis? ambigua Nutt.

No. 175 is Pip. micrathum Pers. var. calycinum hirsuta. Oryzopsis hirsuta Munro in Hb. Boott. sub Wright No. 779! Wright 780! is the same.

No. 176 & 177 are "Piptatherum pubescens Pers." Oryzopsis pubescens Munro in Herb. Boott. apud Wright No. 782! parts.

No. 178. "Piptatherum avenaceum" Oryzopsis Munro Munro in Hb. Boott. apud Wright No. 782! parts Wright 781! & Hb. Boott.! is pure such plant.

No. 179. "Piptatherum nov. sp." Pip. cuspidatum Munro in Hb. N. Pendler No. 915! Lindl. No. 738 are the same. Curtis 1672! very near it.

No. 209 & 210 are Piptatherum albescens Munro. Oryzopsis albescens Munro & Hb. Boott! & Herb. Pir. Lib. Bullit. Leadbeater 737! & D. 314 are the same.

No. 210 is Piptatherum nov. sp. near P. occidentalis. see notes in Spec. returned.

## Hordeaceæ.

No. 180. is Lolium temulentum. L.! L. arvense Sinclair & Lin. Hitch.! an odd variety from.

No. 181 is Elymus condensatus Pers. a fair form, lower leaves pubescent.

No. 181/bis. 182 & 183 are all Triticum repens L. I had 181/bis previously from Nepal as the common Barb or Bunch Grass. T. caninum of Gmelin has a very different habit.

No. 184 is Hordeum pusillum Nutt.

Lindle 92 - 1849

Hordeum jubatum,

185 Long. Sta Maria Bigel

186 9715 Wright,

Situation

187 Coopertinus Bigel

188 Camp Bacon Th

189 San Diego. Th

190 Cal. Fitch.

Munroa Squarrosa.

191 Sonora Th.

192 Bigel, Whips,

Muhlenbergia gracilis

Sta Cruz Isl.

193 Heterospogon Contortus

194 Sonora Th

195 Rio G. Bigel

Andropogon Candicans

196 Scoparius Bigel

A. furcatus

197 Santa Cruz Bigel

198 Mulles Bigel

Andropogon

199 Bigel Whips

200 Rio Grande Bigel

201 2103 Wright

202 Ca Cryptantha

2378 Berlin

203 — Nuevo

Orpenatus

204 Rio G. Bigel

~~205~~ Chlorotes

206 766 Wright,

## Phurbois Gramineæ. Hordaceæ, continued and Andropogineæ.

Nos 185 & 186 are Hordeum pratense L. varadsurdens H. B. K. Hartwig 2025. is same.

Nos 187 to 190. Setarion glymoides Rafin: a valuable series showing how many species and even Genera might be made out of this one. Pendle No 903 is the same.

Nos 191 & 192. "Munroa squarrosa Dom" I consider this is a very good genus of very remarkable structure but I should place it ~~near~~ next to Mulefis or Ricanfis in the doubtful ground between Avenaceæ and Festucaceæ.

## Andropogineæ.

No 193. is "Manisuris granularis Sw."

Nos 194 & 195 are Heteropogon hirtus Pers. L. contortus R. et Sch: Hugh 809. is the same

No 196 is Ischæmum ciliaris H. B. K. stem below the nodes unusually hirsute. Andropogon candidus Rii:

No 197 is Andropogon fasciculatus Mutt. var vaginis hirsutis A. tenuiaristatus: seems to differ in having leaves 3 lines broad & spikes 5–6 inches long.

No 198 is Androp. hirtifolius? Prest var glabresciens Scheive

Nos 199 to 203 are all Androp. argenteus Cavan non-Mk. in my opinion. It is apparently glabrous specimens the nodes are unusually hirsute. I have to examined all very carefully and can point out no real distinction. Drum's 319 is the same also A. circumplicatus Prest described from the terminal spicula.

No 204 is "Insperata cumulinaea" Cyrill.

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Nos 205. 207 & 208 will be found at end of Chloridea.

Nos 209. 210 & 211 — " — " — " Avenaceæ.

No 206 is Acanthus squarrosus Rii's fine spec: six noms on Herb Hooker see further notes with spec: returned.

Pendle 92 – 1849

Phalaris intermedia Bosc; - Munro in Berth. Hartweg, p. 342.

P. microstachya DC, Cat. p. 131; P. Americana Ell. Sk. 1. p. 101; (non Torr.) P. angusta Nees H. Bras. 2 p. 391; ~~P. tenuis Ard, P. Calif.~~ P. occidentalis Nutt. in Trans Am phil Soc. Series 5 p. 144; P. tenuis Ard; P. Californica Hooks & Arn. Bot. Beechy, p. 161;

(~~The~~ A widely diffused species, the different forms of which - due to the stage of development - are hardly varieties; much less species & we agree with Munro in referring them all to the older name of Bosc. - In the case of the Cali. specimen the difference is somewhat interrupted below

1966 Wright; Rio Grande & Gila Schott - Rio Sta Maria Bigelow; Bolson de Mapimi Gregg. Nos 1010 & 2420 Berlandi; Along the coast, California, Hartweg. Walsh Fitch & Rich.

Phleum cenchroides H.B.K. 1. tab 37; Rth. Sum. 1. p 308. Suppl. p 22. tab 7.

Cooks Spring Rh. Mex & Rocky Canyon, Wright; No 2109 & ~~2100~~ 1112, (959 & 755, 1849)

The flumes in some are thickly sprinkled with blackish or reddish dots & in others they are entirely (Can these Wyoming be distinct? - Does this belong in Phalaroides? Compare Phleum -)

[2107 Nr - 1. 25 1 [illegible] - 1836 [illegible]

Lindh 92 - 1849

Phalaris Numbers

| | | |
|---|---|---|
| 1. | Phalaris | Nilu Schott |
| 2 | —— | 1794 Berl |
| 3 | —— | 21440 " |
| 4 | —— | Rio Hu Murin Bigel |
| 5 | —— | California Filet |
| 6 | Silvria | 1638 Lowlitz |
| 7 | —— | Rockler Bigel |

Lizania aquatica, Michx. Flor. 1. p. 74;
Pursh Fl. 1. p. 10 & Suppl. p. 8. tab. 1.
Margin of River near San Antonio Texas
Drummond –

Pancreas
Cuticula
Antelitura
Lapiapo
Parapalma
Grindelia

Cenchrus tribuloides Linn; Trin. Panicea. p. 85,

Rio Grande near Laredo, Schott; Texas Drummond & Riddell; New Mexico Fragg - 983 Wende.

Cenchrus echinatus RTS; ~~Trin. l.c.~~

var β. spicilis solitariis Trin l.c. 1748 - 1434 Berland

Rio Grande, Schott -; Aneiga Grande Fragg -

~~Our specimens~~ These are very like the typical form of which we have specimens from Africa but there is but one spikelet in each of the involucres, lobes of the involucre scabrous,

Cenchrus pungens HBK - 1, 115; ~~RTS Sum~~ RTS.

Engm. 1. p. 166 & Supplt - p 122. ?

C. echinatus (in part.) Trin. Panic. p 85 -

Berlandier Nos 174, 1256 & 2045 -

These agree well with the detailed description in RTS Supplement ~~of~~. The species is quoted as a synonym of C. echinatus by Trin, but our specimens are sufficiently distinct both in habit & form of involucre -

Cenchrus pumilus

8 - Rio Grande Schott

9 - 1434 Berland

Aulopogon abbreviatus Steud syn Flum. 1. p. 111

Near Eagle Pass Schott, No 2079 Nr. & 785 Col of 1879, Texas, Drummond 359 of 2d Col; Arkansas Dr. Leavenworth –

Perennial, caespitose, culms slender 3–6" high. Sheaths shorter than the internodes sometimes pilose at the throat; leaves narrow linear, setaceously acuminate at apex, the lower elongated, equaling or exceeding the culm, the upper 2 or 3 approximate, thin diluted membranaceous striate sheaths forming a kind of involucre which closely invests the ~~flowers~~ panicle, all smooth or pilose with scattered hairs especially near the base. Spikes ~~lets~~ 2–4. somewhat capitulate, common rachis slender smooth – partial rachis contracted so as to bring the ~~flowers~~ spikelets into a more or less globose head ~~spikelet~~ which is short pedicellate, the pedicels being at base, Spikelets 1 flowered: outer glume indurated & thickened, confluent with the rachis at ~~two~~ the narrow base – leaving a rounded sinus between ~~each pair~~ very ~~two floets~~ two spikelets, irregularly oblong (?) contracted at base & near the apex which is trifid, divisions subulate ~~the~~ somewhat spreading the central longest – All more or less ~~spreading~~ greenish – ~~half the length~~. Glume smooth or minutely scabrous, often longitudinally corrugated, ~~Palea~~ glume more or less obovate – ~~irregular~~ ~~in fruit~~ – entire or ~~irregularly~~ 2 fid – Flowers solitary in each spikelet, closely enveloped by the lower glume lower palea equalling the ~~lgt~~ lower glume ~~oblong~~ – 3 fid at apex, 3 nerved, coriaceous & somewhat

Scutellum ~~the~~ green — minute valve broadly
acuminate — involved by the lower —
Stamens —
Ovary ovoid, styles elongated, purple —

Remains ~~of~~ Endemic Antiphonus to a section
of Cenchrus, but the present species seem
generically distinct —

? What are C. punctulatus & C. Belangeri Steud?

Leptagrostis ~~alienus Sprengi~~ racemosa Nees,
var B. occidentalis — Racemes elongated dense
pedunculate triflorus —
L. alienus Sprengi Steud syn Ch. Flora 1. p. 112
Triraphis occidentalis Nees in Flora Brasil. 2, p 286,
Leptagrostis racemosa Brown Ch. Hartweg p. 28,
Racemes 1-3 inches long, dense — pedicels with 2 spikelets
~~2 flowered~~
florets acute but not attenuate at the apex —
the lower spikelets mostly neuters, palea of neuter
floret 5 nerved. Estimate with bristles from a bulbous
base — the bristles upward — leaves strongly bristly ciliate
Presidio del Norte & Burro Cuts Bigelow &
Sonora, Thurber; No 2110 Wright, Berlandier
1536 & 3036 — Llano Estacado.

Perhaps a species?
11 Munroa Leptagrostis Gh Presidio del Norte Bigel
12 ——

Paspalum distichum Linn; Gray. Man. Ed 2 p. 576;
P. notatum Flugge; Fries Summa. p. 53 (teste Gray)
Nelson Schedy; Lam Elezoris Fin, Bigel; no 2053
Wright – (13 Th 14 Bigel Munroe)

Paspalum laxum Michx, Flor. 1. p. 44; Gray l.c.?
Growth of Iron Decos. Bigel – (12 V Munroe) (Vi)

Crichloa sericea Muhl. Pasp. sericum Schult.
~~Paspalum~~ (Helopus) ~~punctatum~~ Flügg; Fries. Summa. p. 43; (4 char.)
Helopus pilosus Fries. Fund Agr. p 104.
Eriochloa punctata Hamilt; Rth. Enum 1. p. 72,
River Leon (Bergen?) Bigel Oct 22/50 – Drummond
3d Jepson col. no 305, & 368 –
Our plant accords with the descriptions above quoted but we have seen no authentic specimens. A slender grass about 3 feet high having 8 – 10 erect distant racemes about as long as the spikes below them. ~~Spikelets on very short~~ ~~clustered~~ pedicells very short clustered, pilose with hairs as long as the spikelets, which are articulated with the pedicels by means of a minute naked fulcrum. Outer spikelets sessile, villous acute 2''' long – sterile fl of 1 palea which is with the glume 5 nerved. Hermaph fl. obtuse. punctiform late short mucronate.
~~Probably~~ P. racemosum Muhl in Trans Amer. Phil

Soc. N. Sci No 5. p. 145. is the same grass as far as can be judged from an incomplete specimen from ~~Red~~ River - Also in our set of Wright's col of 1849 this and the following species are mixed, under No 791.
(15 Munroe Drummond)

~~Paspalum~~ (Helopus) annulatum Hügel Fr. Panis. p. 42 - E. Vinchelon [illegible]
~~Agis & Eustichis pubescent.~~
Erioshloa? annulata Kth Enum p. 72 -
Stn bing known Thurber - No 2087 Wright - No 791 col 1849 in part).
River Gila Mex Emory 1846.
The specimens differ from Dr E. Ludwig's ones in having the Agis & Eustichis pubescent & the anthers of the fertile floret somewhat shorter -
Errors in Patches & is ~~[illegible]~~ one of the few grasses found on the Gila route.
(16 Munroe, Th.)

Find not Helopus better to Reptor as a Elymus? —

Panicum leucophaeum H.B.K. 1. p 97; Pl. Equin 1. p. 124 & Suppl. p. 93; Trin Panic p. 167 & ~~Suppl~~ Gram. Suppl p 103?

Brickellia cinularis; Saccharifloras, et tenuis Nees ex Benth (Tate Trin)

Paspalum sericeum Scheele in Linnaea XXII p 341?

Panicum lachnanthum Torr in Pacific Rep.

Presidio del Norte Berry; Camp Brake Rock Creek Bigelow; Bustro Mts, Antisell, Sta Cruz, Sonora Thurber; No 810 Wrights coll 1849.

We refer the ~~above~~ our specimens to P. leucophaeum H.B.K. which seems to be a very variable species and has been described under other synonyms than those quoted above. Our specimens agree as to the spikelets with a Cuban specimen by Humboldt (?) though the panicle is more simple & contracted - but in this respect they differ greatly among themselves as well as in foliage ~~Berry's & Wrights specimens have~~ which varies greatly in width & hairiness, in some quite smooth - Our plant is distinguished by the remarkable silkiness of the flowers which is brilliant white - becoming ferruginous at maturity - Branches of the panicle closely appressed in the young state spreading when old - Spikelets in pairs 1 long & 1 short pedicelled - 2½" 3''' long (including hairs) lower glume minute smooth, regular, nerveless - upper glume 5 nerved alternate points 5 nerved, or by approximation of the lateral nerves apparently 3 nerved, green - hairs springing from the marginal nerves - Rachilla pl of 1 palea

Resembling to Sp. Plume but broader.
Fertile fl. - very acute, ~~green~~ brown at maturity
3 seed, minutely punctulate, upper palea
equalling & sometimes exceeding the lower & similarly
pointed - Texture less coriaceous than usual in
the genus.

&

Panicum dichotomum Lin; Engl. Mus. Ed. 2. p. 580

No 2085 Wright -

There are two undetermined species of Panicum
in the collections which are probably unde-
scribed - but with ~~so~~ our present materials we
prefer to pass over them to making more
species in a genus where ~~they are already~~
there is ~~[illegible]~~ so much doubling or
confusion.

Panicum (Echinochloa) colonum Linn; Kun
Panic. p. 124? =

On the Colorado Schott, & Marcy Thomas, Dr. No 365 Drummond 2d Coll.
Rio Grande + Bigelow – No 2088 Wright – A
slender culm.
The Short solitary & rather distant racemes
give the plant a different aspect from the
next + the spikelets are somewhat smaller –
(17 mm. long all) 1803 Bent
P. Mulleri Mohl Desc p. 108 & Ell SK 1. 115,

Panicum (Echinochloa) Crus-Galli Linn; Kun
Panic. p. 126.

Specimens of this polymorphous grass occur in
all the collections from Texas to California

Panicum (Setaria) Italicum Linn; Kun l.c.

Rio Leon Bigel – 807 WR 49
Spikes 15 inches long – Introduced (18 mm.)
Cucudata Oct 5 –
Panicum (Setaria) ~~viridescens~~ Linn. Kun l.c.

In all the collections – we include under this
a great variety of forms, some of which have probably
~~been~~ been considered as species – some have
~~the~~ spiciform inflorescence as in the common state
of the plant while others are paniculate nearly
to the summit – but as both forms are found

Selaria viridis Munroe

19 Presto de Bryan Bigelow
20 Burro Mts — Antisell
21 2095 Wright
22 Sta Cruz Mts.

Panicum virgatum

23 Rock Creek Big
24 Simpson "
25 " " " large specimen
26 Ruby Camp "

P. sulcatum?

27 2086 Wright
28 Copper Mines Nr.

P. divergens

29 Frontera Big
30 Rock Cr "

in the same stock we cannot consider this paniculate one other than the plant in an abnormal state.

Panicum virgatum Lecon; Kirn Panic p. 171.

Various localities in Western Texas Bigelow. We have not received this species from any station west of the Rio Grande - Next it ~~seems to be replaced by the following allied species~~

Panicum bulbosum HBK. 1. 99; Th Enum 1. p 99 & suppl. p 78?

Copper Mines New Mexico Bigelow; No 2086 Wright.

Our specimens agree with the description except that the panicle is loose & the fertile flower minutely pauciculate - the conspicuously bulbous root throws out several strong fibres from near its base.

Panicum capillare Lecon; Kirn Panic. p. ~~7~~ 203

Leon Springs Texas. Bigelow.

~~Panicum~~ autumnale Bosc; ~~Rth Enum. 1. p. 115~~;

Panicum divergens Nutt. Descr. p. 120. Ell. Sk 1. p. 130.

P. Autumnale Bosc; Rth. Enum 1 p. 115. Gray Man Ed 1. p. 578.

Rocky Creek & Frontera Tex. Bigelow; No 2082 Wr (787-1849)

No 289 Drummond 2d Coll.

Varies with sheaths & spikelets nearly glabrous or densely villous pubescent - Drummond specimens are

P. fuscum

31. 2091 Wright

32 383 Dum. 797 Nr. 2332" Berl. Glue

33 2090 & 2091 Nr. Glued.

Pinus Jeffreyi Schedule?

34 -- 34 ~~B~~ Dummd.

quite Elliotts plant, of which we have ~~one~~ ~~original~~ from his collection - Beyelows ~~[illegible]~~ the spikelets conspicuously hairy - while those by Wright are intermediate in this respect.

Panicum fuscum Swartz; Trin Panic. p 169.

P. fuscescens Lam. (Fide Spec. Spreng.)
P. fusciculatum Swartz: Ill. Lam. 1. p 94.
P. reticulatum Torr. in Marcy's Rep. p. 298. (in part)
Wright nos 2090 & 2091 (1857 col 1849.) Berland nos 123, 902 & 2332 (his). Red River Capt Marcy. Key West. Blodgett. 383 Drummond 2d Col. &c.

This is a well marked & widely diffused species & has been described under several names besides those quoted above. Trinius l.c. makes varieties α & β. founded upon the more or less compound & spreading inflorescence & the ~~hairy~~ closer sheaths - but the difference in our East Indian specimens is not sufficient for varieties even. The spikelets are usually reddish brown with reticulations between the veins of the glumes & palea. P. reticulatum Torr. was founded on a slender state of the plant with stems somewhat decumbent at base & the reticulations of the glumes & palea more than usually conspicuous.

Potteson

35 Stu Array 701 K.
36 2092 Mr.
37 Van Homer Wells Brig
38 Rockler Brig
39 Lazzuna Colorado Bay. Whiff

Panicum stoloniferum HBK. 1 p. 98; Pk Rev. Gram 2 Fat 116; Pk Enum 1. p. 97 & Supple. p. 74; Torr. in Mexicy Rep. p. 299.

~~Western~~ Texas ~~Bigelow~~ Mexico Bigelow Wright No 2092 (No 2091 in our set is in part this & in part the preceding) No 790 Col of 1849; Berlandier, No 2470; Drummond, No 371 ~~2d Col~~; Riddell; Dr Edwards; "Rio de la Cruz, Santa de Agua" Schott (Where? July 20/55) ~~Forests of the~~ Texas 997.

This species which is a very abundant one has a wide range. Dr James collected it in the Forests of the Mississippi on Long's Expedition & we have it from Pursues in the State of Georgia. The specimens present a variety of forms some with very slender panicles with distant racemes & others with a very much crowded inflorescence. Some of our specimens agree tolerably with the figure above quoted & we refer the whole as above without much doubt.

P. leucophaeum
40 Rockler Bay
41 Sonora 948 lb.

Panicum undetermined
42 Cibolo of the Rio Grande Bazil
43 Sonora 1021 lb.

Boundary Stipulations

Erie [illegible]

Stipulations

Arbitration

Eriocoma cuspidata Nutt. Gen. 1. p. 40.

Stipa membranacea, Pursh, Fl. 2. p. 728; Hook. Fl. Bor.-Am. 2. p 237.

Stipa hymenoides, R & S.

Milium cuspidatum, Sprengel.

Oryzopsis (Eriocoma) lanata Trin. Act. Petrop. 1834. p. 126; Steud. Syn. Pl. Glum. 1. p. 122.

, Steud. l.c. p. 419.

Awn 3 inches long

le, Bigelow, Wright 1996 & ...ndel's New Mexican collection.

, the panicle is less diffuse ...than in those collected in ... on the ~~Lewis~~ Saskatchewan

- The margins of the ... less silky-ciliate

3½

Stipa Theesiana, Trin & Rupr. Stip. p 27; Munro in Pl. Hartweg. p. 342; Torr. in Whipple's R.R. Survey. p.

S. leucotricha Trin & Rupr. l.c.

S. setigera Presl. Rel. Haenke. p. 226; (fide Munro)

S. avenacea, Hook & Arn. Bot. Beechy, p. 403.

S. ciliata, Scheele in Linnaea 22. p. 342; Steud Syn. Pl. Glum. 1. p. 127.

Eriocoma cuspidata Nutt. Gen. 1. p. 40.

Stipa membranacea, Pursh, Fl. 2. p. 728; Hook. Fl. Bor.-Am. 2. p 237.

Stipa hymenoides, R&S.

Milium cuspidatum, Sprengel.

Oryzopsis (Eriocoma) lanata Trin. Act. Petrop. 1834. p. 126; Trin & Rupr. Stip. p. 19; Steud. Syn. Pl. Glum. 1. p. 122.

Fendleria synchelytroides, Steud. l.c. p. 419.

Valley of the Rio Grande, Bigelow, Wright 1996 & Parry. Also no 979 of Fendler's New Mexican collection. Fremont 603

In all our specimens the panicle is less diffuse and the awn shorter than in those collected in Oregon by Douglas and on the ~~Lewis~~ Saskatchewan by Drummond, moreover the margins of the sheaths are more or less silky-ciliate

Stipa neesiana, Trin & Rupr. Stip. p 27; Munro in Pl. Hartweg. p. 342; Torr. in Whipple's R.R. Survey. p.

S. leucotricha Trin & Rupr. l.c.

S. setigera Presl. Rel. Haenke. p. 226; (fide Munro)

S. avenacea, Hook & Arn. Bot. Beechey. p. 403.

S. ciliata, Scheele in Linnaea 22. p. 342; Steud Syn. Pl. Glum. 1. p. 127.

Stipa Mexicana

44 — Jep. South (S. calicina)
45 — 263 (1849) Mex.
46 — Wright 1848 — T. S. Drum
47 — San Diego Calif. Parry

} glumes

San Diego California, Parry.
Shasta & Rogue River Valley, Dr Hulse; Benicia California, Bigelow; Sacramento Valley, Hartweg (No 2028).
Texas, Wright, Drummond & Lindheimer.

The specimens above quoted seem to be all forms of one species sufficiently distinguished from S. avenacea by the bony & mostly colored glumes the white hairs of the lower palea and callus, the short upper palea and barbellate awnlets.
~~Plants~~ Leaves variable in width & pubescence; in the young plant ~~the leaves have~~ with strongly ciliate margins; nodes glabrous or retrorsely pubescent; glumes more or less colored, often deep purple; lower palea entirely, or the lower portion only, clothed with white hairs even when mature, the naked portion tuberculose scabrous.

~~The~~ S. setigera of Presl is and older name than the one we have retained and if his plant and S. Mexicana Trin. be ~~the same, as guessed by Munro, should be preferred but~~ as Munro considers the same, should be preferred, but the latter ~~author~~ author says of Hartweg's plant "verosimiliter varietas S. nicoloris Vahl" and as it is not improbable that ours will prove to be that species, we to avoid confusion retain the name adopted in Pl. Hartweg

S. viriescens

48 — Kitzpeine — glued

S. fimbriata

49 Colorado Bizel

50 — 1999 glued Wright

50" —— " " Impl

S. pennata

51 — Numbers Jh.

S. hyalinum ?

52 Painted Camp Big —

53 1999 Wi glued.

Stipa or Oryzopsis ?

54 2000 Wi — glued Best Bri.

55 Large Stipa Oct 13/53 Big Whip

Stipa fimbriata HBK. 1. p 103; Kunth, Rev. Gram. t. tab. 43; Trin & Rupr. Stip. p. 34.

Wright, no 1997: Copper mines, New Mexico June & August. Bigelow.

A well marked species. The palea becomes quite black at maturity when the pubescence becomes brown. The lower palea is mostly sessile so that the awn appears eccentrically attached. The upper palea conspicuously grooved on the back and produced into a short mostly incurved mucro which projects beyond the lower palea. The very nearly allied S. viridescens H.B.K. was collected in the Zuni region by the botanist of Capt. Sitgreaves' expedition. Both these species ~~[illegible]~~ have more the habit of Oryzopsis than of Stipa though they fall into the latter genus as limited by Trinius.

Stipa pennata Linn; Trin. & Rupr. Stip. p. 80.

Var. neo-mexicana. Leaves smooth. Palea pubescent throughout. Awn smaller & shorter & less copiously plumose.

Rio Mimbres, New Mexico, Thurber (269); Fendler's New Mexican Collection No. (?)

Scarcely to be distinguished from ~~European~~ specimens of S. pennata (not before accredited to this continent

The flowers are somewhat smaller than in the type & the crown (6"-7") shorter, minutely pubescent below the ~~[illegible]~~ geniculation, the upper portion plumose with silky hairs, about half as long as in the European forms, which are much shorter towards the apex

Undeveloped specimens of what may prove to be Stipa hyalina, Nees. were collected at Painted Camp by Dr Bigelow (also no 1999 Wright ?)

A. californicus

56. San Pedro Bigel

A. pumpinen

Mr B.

57 Rio Leon Big

58 Presidio de Norte Big

59 2551 Berlandy

60 1777 Bard

Mr H

61 Camp Bushe Bigel

62 2006 Wright

63 2004 "

64 2015 "

65 Rio Lempia Bigel

66 - 293 Drummond Gland

Mr D

67 a Bullens Fremont

Mr E.

68 San Bernadino Fh

69 Copper Mines Bigel

Aristida spiciformis Ell. Bot. S. Car. 1. p. 141; Trin & Rupr. Stip. p. 106.

Head of Rio San Pedro, Texas. Nov. 1850. Bigelow.

Aristida purpurea, Nutt. Trans. Amer. Phil. Soc. 5. p. 145; Trin & Rupr. Stip. p. 107.

A great number of specimens of, what seem to us, forms of one very variable species occur in the ~~[illegible]~~ collections and none of them are of the typical form of Nuttall, of whose original stock we have specimens. Notwithstanding the diversity in size, the branching of the panicle & length of the awns in the extremes of the varieties mentioned below there seem no good characters to warrant their separation into species and with the very abundant materials before us we feel warranted in reducing many nominal species to varieties of one — which seems to vary largely under the varied influences. ~~of~~

β. Berlandieri "Radiis contractis, fere sessilibus; glumis brevissime dentatis" Trin & Rupr. l.c.

Texas & New Mexico. River Leone Oct 23d 1850. & Presidio del Norte (a scalrous form) July 1852. Bigelow; No 2005 Wright (8743 col of 1849)

These agree with no 1777 of Berlandier's collection, cited by Trin & Rupr l.c. Berlandier's Annulus 457. 949. 2379 & 2551 ~~of Berlandier's~~ are the same as is no 136 of Lindheimer's collection of 1846.

Var γ. Hookeri. "Robustior, saepe bipedalis; verticillis fructiferis remotioribus; glumae apice integris vel vix pauciore denticulatis." Trin & Rupr l.c.

Texas. On the Leimpin & at Camp Bache, Bigelow; Wright nos 2003, 2004, 2006 & (?) 2015. In some of these specimens the inflorescence is more crowded & the awns shorter than in Drummonds no 293, quoted by Trin. Rupr.

Var δ. Nuttallii. Culm short (8"–10") branches of panicle 2–3 nate. the lower flexuose & spreading the upper short & appressed. Upper glume exceeding the palea. awns 3–"3.p" long.

A. pallens Nutt. Gen. 1. p. 57. (Non Cav. nec Pursh which is A. oligantha Michx)

A. longiseta, Steud. Syn. Glum. 1. p. 420.

On the Platte, Fremont, 1842; Fendlers New Mexican collection no 978. Also collected in Nicollets & Murray's Expeditions. Very distinct from the South American A. pallens of Cav. which has the lower glume 1/3 shorter than the palea & exceedingly slender awns 7–8 lines long.

Var ε. Fendleri, Culm 4"–8". branches of panicle short, erect & mostly 1 flowered.

A. Fendleriana Steud l.c.

New Mexico. Fendler no 973; Rio Mimbres, Cooke's Spring & Copper Mines, Bigelow; Sonora, Thurber (1718)

A. Scheideanus off
70 Colre Bigel
71 Leagnus Colorado Bigelowii

A Scheideanus
72 Coots's Spring Bay
73 - Colre - fl Erythrist Bigel

A Refractus ?
74 - Big Nhsp
<u>undetermined</u>
75 - Julma Tully Blake <u>Hett</u>

A <u>dispersus</u> ?
76 Fort Yuma Maj Thomas

A. Californicus
77 Colorado Dent Schott <u>Hett</u>

In all these varieties the upper palea differs as to roughness, in some specimens it is quite glabrous except near the apex & in others it is strongly & even tuberculose scabrous in lines throughout. The name purpurea is not ill chosen as the flowers are as often green or straw color as purple.

Aristida Scheidcana, Trin & Rupr. Stip. p. 120.

Cooks Spring: New Mexico, Nov. 1851, Bigelow; Wright Nos 2009 – 2010 – 2011 & No 745 col of 1848.

The other specimens accord with ~~Trin~~ the character of Trin & Rupr. In the young plant the sheaths are hairy at the throat & sometimes have a pilose zone at the junction with the lamina. The long branches of the panicle are strongly compressed with the edges horizontal upwards, the lower ones sometimes 8 inches long erect, spreading or even reflexed, somewhat smaller at the ~~panicle~~ junction with the axis. Lower palea purple, marked with black spots, attenuate above into a twisted inarticulate scabrous stipe 6"–7" long terminated by 3 very unequal awns, the central of which is about 5" long & slightly divaricate, the lateral 1/2 a line long & erect. In some specimens the lateral awns are scarcely perceptible without the aid of a glass. Callus bearded with conspicuous white hairs.

Aristida dispersa, Trin. & Rupr. l.c. p. 129

Nor?.

Brier Isla. Parry & Schott, Wright No. 2001 & 740 col. of 1849.

Doubtfully referred to the above of which we have seen no authentic specimens.

7.

Aristida Californica, sp. nov. ~~(? Desv.)~~

Culms cespitose, erect, simplicate & fasciculate, branching, densely foliate pubescent, pilose at the nodes. Sheaths loose, striate, shorter than the nodes slightly pubescent when young, hairy at the throat. Ligule short, membranous. Radical leaves 1½ inches long, those of the culm ¾ – 1 inch in length, convolute filiform, ligule, hairy. Panicles about 1½ inches long, about 6 flowered, the lower flowers, in pairs, sessile, the other short pedicelled, the upper ones solitary. Glumes very unequal, the lower ½ from half the length of the upper which is about ⅓ lines, colored, membranaceous, 1 nerved which is somewhat scabrous, when old somewhat light at the apex. Flower shorter than the lower glume, pubescent upon a callus long in proportion to the size of the glume (1 line), conspicuously bearded. Lower palea 1¾ – 2 lines long, mucronate & flavate when old, slightly scabrous above. Arms united into a twisted, ~~[illegible]~~ minutely lengthened stipe which is about twice the length of the lower palea with which it is articulated and from which

it separates at maturity. Upper pulvin 1/4 as long as the lower, hyaline. Synanthes 2, equalling the upper pulvin. Anthers ? — Styles ? —
Cargopsis compared to the flower, with a conspicuous grove nearly half its length.

Rio Gila. Emory, 1846 (specimens just flowering) Colorado Desert & around Fort Yuma, Schott, ("Lacate de hiere")

This seems to belong to this section Arthrothamnus, the only one of the group yet found on the American continent —

(There seems to be a singular mode of branching as if the earlier flowers became proliferous & produced a fascicle of branches)

(Poor Notes)

among the grasses collected in Capt. Whipples R R Survey & not determined at the time of the publication of his Report is

Culm slender, 6 inches or more,

Sheaths smooth equalling or slightly exceeding the nodes, scabrous except a few hairs at the mouth, little very short. Leaves convolute filiform, subrigid, those of the culm about 3 inches long, smooth. Panicle expanded, loose, axis scabrous, as well as the rays which are in pairs, united at the junction with the axis, spreading & all save the uppermost strongly reflexed, one about an inch in length 3-4 flowered, the other half as long, 2 flowered, the uppermost 1 flowered. Glumes about 4 lines long, the lower slightly shortest, rough on the midnerve, slightly cuspidate. Lower palea smooth below & spotted, attenuate, rough & scarcely hairy above, equalling or slightly exceeding the upper glume middle lobe 8 lines long the lateral about a line shorter, somewhat diminute, not articulate

a delicate species, different from any known to me, distinguished by the reflexed rays of the panicle.

Aristida refracta (sp. nov.) Panicle about 4 inches long, rays in pairs, one short & two flowered the other longer about 4 flowered, rigid & mostly refracted. Glumes subequal, the upper slightly longer acute. Scabrous on the back about equalling the flower which is somewhat attenuate, compressed & scarcely twisted above. Setae (about 8 lines long) subequal. divaricate.

Camp 51. Sept 23-1853. Bigelow in Whipples Expd.

Culm slender, 6 inches to a foot in length, glabrous. Sheaths smooth equalling or slightly exceeding the nodes, scabrous except a few hairs at the mouth. Leaves convolute filiform. but rigid, those of the culm about 3 inches long, smooth. Panicle expanded. loose, axis scabrous. as well as the rays which are in pairs, united at the junction with the axis. spreading & all save the uppermost strongly refracted, one about an inch in length 3-4 flowered, the other half as long, 2 flowered. the uppermost 1 flowered. Glumes about 4 lines long. the lower slightly shorter, keeled on the midnerve, slightly cuspidate. Lower palea smooth below & spotted, attenuate, rough & scarcely twisted above, equalling or slightly exceeding the upper glume middle seta 8 lines long the lateral about one line shorter, somewhat divaricate, not articulate

a delicate species. different from any known to me, distinguished by the refracted rays of the panicle.

Boundary Stipaceae

(First Draft?)

pages 39-45.

:o.

728; Hook. Fl. Bor.-Am.

1. Retrosp. 1834. p. 126; Trin

.. 1. p. 122.

ed. ~~Syn~~ l.c. p. 429.

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. p. 27; (1842) Munro in

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54, (fide Munro)

) Trin & Rupr l.c. p. 28.

b. 342; Steud Syn Glum. 1. p. 127.

If Hartney's plant be really S. neesiana Trin. then the synonymy is correct. S. leucotricha Trin & Rupr. is founded upon a specimen from Hooker (in all probability no 5 of Drummond) S. ciliata Scheele. is evidently described from a young state = Lindheimer's specimens. Other specimens show the same ciliate lines. — But Roeh's. S. setigera is the oldest name & if this view be correct should be adopted. If the whole be not S. hirsola Trin.

# Stipaceae

**Eriocoma cuspidata** Nutt. Gen. 1. p. 40.

Stipa membranacea, Pursh, N. 2. p. 728; Hook. Fl. Bor.-Am. 2, p. 237.
S. hydroides R. & S.
Milium cuspidatum Spreng.
Oryzopsis (& Eriocoma) lanata Trin. Act. Petrop. 1834. p. 126; Trin & Rupr. Stip. p. 19; Steud. Syn. Pl. Glum. 1. p. 122.
Fendleria ~~Rhynch~~ Rhynchelytroides Steud. ~~Syn~~ l.c. p. 429.

Valley of the Rio Grande Bigelow, Wright (1996) & Parry (Fendl. New Mex. Col. no 979).

In all the specimens the panicle is less diffuse and the awn shorter than in those collected by Douglas in Oregon & Drummond ~~on~~ the Saskatchawan. The margin of the sheaths are moreover more or less silky ciliate.

{ If the twisted awn be the only character which separates Stipa & Oryzopsis, then certainly the diffuse panicle, pointed glumes, remarkable silkiness of the palea & other characters make this sufficiently distinct from Oryzopsis }

**Stipa hassiana** Trin & Rupr. Stip. p. 27; (1842) Munro in Pl. Hartweg p. ..... Jour. in Hooker's Rep. p.
S. leucotricha Trin & Rupr l.c. p. 54, (1830) (fide Munro)
S. setigera Presl. Rel. Haenke. p. 226; Trin & Rupr l.c. p. 28.
2 S. ciliata Scheele in Linnaea 22. p. 342; Steud Syn. Glum. 1. p. 127.
1 S. arenacea, Hooks & Arn. Bot. Beech. p. 403.

{ If Hartweg's plant be really S. hassiana Trin. then the synonymy is correct. S. leucotrichia Trin & Rupr. is founded upon a specimen from Hooker (in all probability no 5 of Drummond) S. ciliata Scheele. is evidently described from a young state = Lindheimer's specimens. Other specimens show the same ciliate hairs. — But Presl's. S. setigera is the oldest name & if this view be correct should be adopted. If the whole be not S. hirsuta Nutt. }

Munro in "Pl. Hartweg" Sup of Hartweg's specimen "verosimilis" varietas S. Nicolai Vahl."

Wright, (Col. of 1848) – California; Shasta & Rogue River Valley, Dr Hulse. Benicia, California Dr Bigelow, Sacramento Valley, Hartweg (2028) Texas, Drummond (1-5) & Lindheimer 1846.

The specimens from the above mentioned collections seem to be all forms of the same species, distinguished from S. arenicola by the long & colored

glumes, the white hairs of the lower palea & callus. The short upper palea and bartellate anthers.
Varies in width & paleaceous of foliage. The young plant has the leaves glume with ciliate margins; nodes glabrous or retrorsely puberulent; glumes more or less colored, often deep purple; lower palea wholly, or cloth only below with white hairs, even when old, the naked portion tuberculose-scabrous.

Stipa (sp. nov.)

Panicle loose, rays few flowered, spikelets small, glumes nearly equal acuminate short cuspidate, minor nerved. membranaceous. 1/4 longer than the flower. Lower palea coriaceous, villous puberulent dorsally gibbous, upper palea equalling or slightly exceeding the lower, strongly grooved on the back, indurated, acute at the apex. Anthers muticeous, awn slender 5-12 lines long, slightly geniculate near the middle.

New Mexico Wright, No 1997 (Col. 1851-52) & Bigelow, at the copper mines June (a starved state) & Ang; Ringgold Camp 19 (Zuni Region)

Culms 1-3 feet high, but geniculate below, nodes glabrous. Sheaths loose smooth, shorter than the internodes. Leaves flat (sometimes involute) scabrous on the margin, more of the culm about 2 inches in length. Branches of the lax panicle mostly in pairs, or the lowermost in 3's or 5's, 2-4 flowered above the middle, minutely scabrous. Glumes ovate, acuminate, short cuspidate, 3-6 lines in length the lower 7 & the upper & slightly shorter 5 nerved. Membranaceous or somewhat herbaceous at base, sometimes purple with age. Lower palea 2-4 lines long, becoming

indurated and black at maturity when the yellow pubescence becomes brownish. Mostly gibbous on the back so that the acorn appears unequally insetted. Upper palea, even in the young state coriaceous & ~~stay~~ conspicuously grooved when young. The acute & mostly incurved apex usually projecting beyond the lower palea. Callus very short. The hairs scarcely longer than the pubescence of the palea.
Acorn 2-3 times as long as the flower, tinged yellow & slightly pubescent.

for its whole length, once or twice geniculate.

(This does not seem to agree with any specimens or descriptions to which I have access. Appears to be nearest to S. Richardsonii Link. but differs in its long & indurated upper palea, its dorsally distended lower palea & in the decay nerved glumes. — It is very near some species of Oryzopsis)

(?) Stipa pennata Linn; Trin & Rupr. Stip. p. 80.

Var. Neo-Mexicana. nodes glabrous.

Culm about 2 feet high, leaves ~~involute~~ filiform. ~~leaves~~ ~~smooth~~. Sheaths smooth longer than the internodes. Panicle somewhat strict. 5-5 inches long (exclusive of awns) the twigs in pairs & two flowered or solitary & one flowered, erect. lower portion of the panicle ~~involved~~ included by the upper sheath. Glumes about 3/4 of an inch long, pale green, many nerved, attenuate into a long subulate awn of about their own length. Paleae equal, the lower pubescent to the apex which is not attenuate but obtuse & acuminate; 5 lines in length. Callus conspicuous 2 lines long: strongly bearded & with the paleae becoming fuscous with age. Awn 6-7 inches long: geniculate, twisted & pubescent below. The geniculation the upper & longer portion plumose ~~with~~ silky hairs which diminish in length towards the apex.

Near the River Mimbres New Mexico Thurber No 269 — also occurs in Fendlers New Mexican collection No (?)

Wright. Nos. 2003, 2004, 2006 (?) & 20015 (1851-52); Bigelow on the Gila & at Camp Bache, Texas (?).

This is so near L. pennata (which it has not been found on this continent) that I am puzzled what to do with it. It is scarcely to be distinguished from Russian specimens of that species in Herb. Jos. The chief points of difference with the type are the smaller leaves, the smaller & equally pulescent pulea (var β. mediterranea Kirschleria sinuata) minute pulescent crown & shorter and less plumose awn, which is pulescent upon the outer portion.

Aristida

Bigelow. no 1826.

New A. Spiciformis

Aristida purpurea, Nutt. Trans. Amer. Phil. Soc. 5, (1837) Trin & Rupr. Stip. p. 107.

A great number of specimens ~~of~~ ~~often~~ this very variable species occur in the collections from different localities & none of them seem to be precisely the typical form of Nuttall. Though the extremes of the varieties mentioned below differ widely in size, ~~in~~ the branching of the panicle & length of awns there seem to be no good characters to ~~have~~ warrant their separation into species, as one might be disposed to ~~do~~ without the very abundant materials in our possession.

B. ~~Hookeri~~ Berlandieri, "Rays contracted almost depile, glumes short-bidentate" Trin & Rupr. l.c.

Texas & New Mexico, Bigelow Oct. 22, 1850 & Presidio del Norte (a somewhat scabrous form) July 1852. ~~These agree with the Berlandier specimens. no 1777. cited by Trin & Rupr. Nos. 457, 949,~~ Wright 2005, ~~2006~~ col. of 1851-52 (& no 7243, 1849) These agree with the specimens no 1777 of Berlandier's collection, cited by Trin & Rupr. Annulus 457, 949, 2379 & 2551. of Berlandier's collection are the same.

Var. γ. Hookeri, "Slender, verticils of rays more remote, glumes entire or denticulate at the apex." Trin & Rupr. l.c.

(Wright. Nos. 2003, 2004, 2006(?) & 20015 (1851-52); Bigelow on the Gila & at Camp Burke, Texas (?).

~~A. pulchellus, Nutt. Gen. p.~~. In some of these specimens the inflorescence is more crowded & the arms shorter than in the original specimen from Drummond's collection, No 293, quoted by Trin & Rupr l.c.

Mr. D. Nuttallii, culm short, (exclusive of arms, 8 inches) branches of panicle in twos & threes, the lower & flexuose spreading, the upper short & appressed; 1–2 flowered; upper glume exceeding the palea; arms 3–3½ inches in length.

A. pallens. Mutt. Ken. 1. p. 57. not of Ker. nor Pursh (which is A. oligantha Mitp.)
A. longiseta Steud. Syn. Glum. 1. p. 420.
On the Platte, Fremont, 1842; Fendler no 978. (New Mexico) (also collected in Nuttall's Expedition & on the Missouri in Nicollets Expedition) Very different from the South American A. pallens Ker. which has the lower glume 1/3 longer than the flower & very slender awns 7-8 inches in length.

M. E. Fendleri Culm short. Rays, one short & one at or nearly 1 flowered.
A. Fendleriana Steud. l.c. p. 420.

New Mexico; Cooks Spring, River Mimbres & Copper Mines Dr Bigelow, Sonora, Thurber no 718. Fendler 973.
In some of the specimens from the latter locality the upper glume is shorter than the flower.

In all these varieties the palea is variable as to roughness. in some specimens it is glabrous except at the apex & in others it is strongly & even papillose scabrous in lines for the whole length.
The name purpurea is not quite chosen as the glumes are as often green or straw color as very purple.

Aristida Scheideana Trin & Rupr. Stip. p. 120.
Podosaemum Stipoides, Cham & Schlect. in Linnaea (non HBK)

Cooks Spring, New Mexico, Bigelow Rep. 1854; Wright Nos. 2009 - 2010 - 2011 (Cat 745 col. 1848)

a well marked species the old states of which accord with the description. In the young plant the sheaths are ~~sliding~~ at the throat, sometimes with a pilose zone at the junction of the lamina. The long branches of the panicle thickened &, when several, united at the junction with the axis. compressed with the edges roughened upwards, the lowest sometimes 8 inches long, erect, spreading or even reflected.
Glumes, purple in the young plant, yellowish with age 5–6 lines long, naturally unequal, awn pointed.

Palea purplish & marked with blackish spots, subtended by a short callus bearded with very white hairs and attenuate above into a ~~long~~, twisted, inarticulate scabrous stipe 6-7 lines long which bears the very unequal awns, the middle awn about 5 lines in length slightly divaricate, the lateral only 1/2 a line long and erect, In some specimens the lateral awns are so very minute as to be scarcely perceived without the aid of a glass.

Aristida

Hills near the Copper Mines, New Mexico Bigelow, Oct. 23. 1851, Wright, Col 1851-52, Nos 2007 - 2008 - 20012, 20013. 20014. (739 - 742 Col. 1849) Fendlers Col. 976.

Aristida = A. dispersa ?

Bear Riv, Parry, March 1852. & Schott 1858, no 18, Colorado Desert No 20 Schott, - Nos 2001 (1851-52) & 740 (1849) Wright.

A. Fendleriana [illegible]

A. -

Caudex [illegible], culms short, not [illegible] [illegible] & often [illegible], leaves co-
[illegible], [illegible] somewhat [illegible] [illegible], second,
[illegible] [illegible] the [illegible] of [illegible] - mostly
smooth & usually pilose ciliate at the [illegible]
- [illegible] a [illegible] [illegible] - [illegible]
[illegible] - [illegible] [illegible] & 1 flower or 2 - 3
[illegible] & 2 - 3 flowered [illegible] or [illegible] -
[illegible] [illegible] [illegible] the lower shorter than
the upper longer than the [illegible], [illegible]
or the [illegible] [illegible] - acute & often [illegible]
[illegible] [illegible] [illegible] outer short, [illegible]
[illegible] usually [illegible] [illegible] [illegible]
[illegible] equal 3 - 8 times as [illegible] as the [illegible]
[illegible] - upper [illegible] [illegible], [illegible]
[illegible] the [illegible] - [illegible] [illegible] stigmas
[illegible] [illegible] [illegible] - [illegible] [illegible] shorter than the
[illegible] - [illegible] [illegible] - [illegible]
stigmas - [illegible] [illegible] - [illegible]
longer than the ovary - [illegible] - [illegible]

A. [illegible] Pursh Fl. 2. p. 708! Nutt. Gen.
1. p. 87.
A. [illegible] Steud. Syn. Gram. 1. p. 400!
A. [illegible] Steud. l. c.!

Very near A. pallens cast. [illegible]
often much longer than the pedicel [illegible]
[illegible] longer below — [illegible]
& much longer display [illegible]
Seychelles specimen —
Varies in color of flowers [illegible] in young
state — leaves often [illegible] — [illegible]
sometimes [illegible] & very [illegible] — the [illegible]
often [illegible] exceeding the petals —

944
2374
[illegible]
[illegible]

Very near A. palle
Office made longe
[illegible] longer setae
& rounded longer d
Seybular Spurs
Veins in order of
Stile – leaves of
Cornelius Hunt d
after Viscount Ep

Lycaenus
Alcipe
Nilpa
Spodoptera
Agrotis
Mutiendrosia
Epicampoce

Lycurus phleoides H. B. K. N. Gen. 1. p. 142. t. 45; Trin. Agrostis. 1. p. 33.

[Pleopogon setosum Nutt. Pl. Gand. p. 189? (compare spec in Acad)]

Painted Camp. Texas, Nov. 1850; Copper Mines, New Mexico, Oct 1851. Bigelow. Wright No 750 (col. 1849) & 2030 (1852) Collected also at Lagunas Colorado by Dr Bigelow in Whipple's Survey. The setae of the glumes & palea very variable in length, even in the same specimen.

(78 Mun. Bigel Colo)

Alopecurus aristulatus Michx. Fl. 1. p. 43; ~~Gray Man~~. Hook. Fl. Bor.-Am. 2. p. 233; Gray. Man. Ed 2. p. 541.

Rio Munitas New Mexico. Dr Bigelow.

~~Rhem fratuosa. Trin~~

Vilfa Nicholsii Torr. in Whipples Report. p.

Hills near the Copper Mines, New Mexico. Oct. Bigelow! No 1967 Wright; Collected also by Dr Bigelow in Whipples R. R. survey on Sandia Mts. & by Dr Woodhouse in Sitgreaves' Expedition at San Francisco Mt.

(79 Whip - 80 Colo Munrol)

Vilfa utilis. Torr. in Williamsons Rep. p.

Near the head of the Nueces & at Piedra Ruta Tex. Dr. Bigelow. Near Parras, Mexico, Gregg & in California by Mr Blake.

(81 Bigel Piedra Ruta)

For fuller description see page 57.

used ~~employed~~ by the mexicans in stuffing their aparejos or pack saddles, hence the name given it by Dr. Torrey.

V. utilis nu? plant much stouter, panicle less expanded, glumes 2/3 the length of pulea & acute. Lower pulea very acute. Caps of leaves manifestly ciliate hispid. Cooks Spring, New Mexico, Dr Bigelow. No 1983 Wright. + 746 (col 1849) also No 958 Fendlers New Mexican collection. (82 Munroe Cooks Spring Big)

(See Dr. Torreys Rep. where he has some talk about this – a different species?)

Vilfa cumulosa H.B.K. Nov. Gen. 1. p. 137. t. 68 A; Trin. Agrostid. 1. p. 83.
Sporobolus cumulosus Kunth. Enum. 1. p. 215 & suppl. p. 172.
Agrostis mucronifolia. Steud. Syn. Pl. Glum. 1. p. 171.
Mule Spring, Bigelow & Cooper Mines, Thurber No 1069 – Wright 1982 (& 788 & 789 col. of 1849) No 986. Fendlers New Mexican Collection.
Varies in the degree of hairiness of the ~~spikelets~~ glumes & pulea Sporobolus
(compare with figure in ~~H.B.K.~~)

Vilfa undetermined

No 1973 Wright. (84 Munroe Gland)

The following species was omitted in the enumeration of the Grasses in Whipples Report.

Nipa fruticans

Culms from a strong creeping perennial rootstock. 6"-10". erect. wiry. densely leafy & branching below. smooth. The lower sheaths short & crowded, the upper shorter than the internodes. ligule 1/2". lacerate. Leaves 6"-8" long setaceous-convolute, rigid & recurved. mucronulate at apex. Panicle long exserted (2" from upper sheath) 1/2" long, ~~Heads~~ green. branches erect, the lower in pairs 1-2 flowered. Spikelets straw-color about 2" long. glumes delicate. acute strongly 1 nerved. glumes 1/3 shorter than palea. lower palea 3 nerved. pilose for half its length & terminating in a mucronate point. the upper nearly equalling the lower, very acute, strongly 2 nerved. pilose on the back.

Camp 49 - Plaza Larga Sept 21. 1853. Bigelow.

Culms branching & very leafy 1-2 miles from the base. simple above with 1-2 distant leaves.

A puzzling form ~~& quite~~ almost as near ~~Nipa as~~ Muhlenbergia as Nipa - the upper palea mucronate as in V. cuspidata.

(83 Munroe)

Culm stout 2-4 feet high, smooth -
Sheaths smooth, shorter than the internodes
Ligule very minute, ciliate.
Leaves flat or involute 6"-1 foot long, 2-3 lines
broad at base attenuate at the apex, scabrous
on the margins, pilose with a few long hairs
on the upper surface near the base.
Panicle 8"-1 foot long, rays solitary or several
irregularly inserted 2"-2½" long, spreading 1/4 naked
or floriferous to the base, glabrous throughout.
Pedicels shorter than the spikelet.
Spikelet 1.1/4" long brownish, smooth.
Lower glume about 1/3 the length, the upper 1/3
to 1/4 shorter or nearly equalling the palea, 1 nerved
Lower palea acute, strongly 1 nerved, the upper usually
somewhat longer, bicuspidate 1 nerved - often splitting,
Seed brown, the coating very delicate & not very
readily separating.
No 1979 & 1976 Wright; Cooks Spring, Bigelow,
("Presidio del Norte", Parry; "Rio Bravo del Norte" Schott
& "Cienegas Grande" Gregg are probably ~~state~~ young
states of the same.)
To be compared with O. schiedeanum Trin

This belongs to Sporobolus cryptandrus, var. elatior - page 52.

Culm 8 inches to a foot in height. (perennial?) branching for its whole length, glabrous except a minute pubescence at the nodes.
Sheaths loose, smooth, mostly shorter than the internodes
Ligule minute lacerate.
Leaves, the old ones about 2 inches long, 1 line wide scabrous on the upper surface & margins, convolute.
Panicle slender 1-1½ inches long, axis & pedicells scabrous, branching below, branches erect, the lower 5-6. flowered, the upper 1-2 flowered. the upper leaf often equalling the panicle.
Spikelets 1/2 lines long. glumes 1 line long. somewhat curinate, scarcely on the midnerve.
Reflexion palea 1/2 lines long very acute, & even mucronate. 3 nerved. scarcely on the back & at the apex. Superior palea somewhat shorter 2. nerved & scabrous on the back.

Grain compressed —

Cooks Spring, Brizelow — Wright No 746 (1849) & 1983 (1851-52) Fendler New Mexico. No 958.

Resembles somewhat V. vitis, but much slenderer. Stem branching from the axils of the persistent leaves of the previous year, distinguished by its less spreading panicle, rougher leaves & acute & scarcely pubescent palea. The glumes are also shorter in proportion to the palea.

This belongs to little Colorado — [illegible]

· Sporobolus cryptandrus Kunth. Mem. Ed. 2. p. 542; Torr in Williamson's Rep. p.

Agrostis cryptandra Torr. in Ann. Lyc. Nat. Hist. N. Y. 1. p. 151.
Vilfa cryptandra Trin. Agrostid. 1. p. 89; Torr. Fl. N. Y. 2. p. 440
V. Trinii Steud. Syn. Glum. 1. p. 156 (?)

Texas Wright. No. 1977 & Nos 3578 & 941 undistributed
all the specimens of this plant that I have seen ~~except~~ the original one of Dr James' collection have the axils of the panicle glabrous.

"~~Na. foliis angustioribus panicula coarctata~~" etc Torr in ~~Stansb Rep~~

Sporobolus cryptandrus, var. flexuosus ~~var. flexuosus~~ panicle elongated flexuose – rays short, spreading, few flowered –
Rio Grande Valley, Nov. 5 Bigelow; No 1978 Wright & No 725 col 1849 –
The slender panicle about 1 foot long, rays distant, spreading or reflexed, pedicels elongated, ~~filiaje~~ & flowers, member as in the type.

⊕

Sporobolus airoides Torr. in Marcy's Rep. p. 300.
Agrostis airoides Torr. in Ann. Lyc. Nat. Hist. 1. p. 151.
Rio Grande Valley Nov. 5. 51. Bigelow; Wright Nos 1975 & 1977 –

⊕ (Sporobolus cryptandrus.)

See page 50.

Var Elutior. 2"–4" smooth, leaves flat or involute 1/2–1' long. 2–3 lines broad at base alternate on the ~~[illegible]~~. Panicle 8"–1' long upper glume mostly shorter than the palea which the upper is usually somewhat the longest. Utricle very delicate & ~~not readily separa~~ slowly separating from the trouncate seed –
Cow's Spring Bigelow. Nos 1979 & 1976 Wright –
Possibly a distinct species. Specimens in a very young state of what appears to be the same plant collected on the Rio Grande by Parry & Schott.

Sporobolus ramulosus Kth. Enum. 1. p. 215 & Lippl. p. 172
Vilfa ramulosa. HBK. 1. p. 137. t. 684; Trin Agrostid. 1. p. 83,
Agrostis minutiflora, Steud. Pl. Glum. 1. p. 171.
Mule Spring New Mexico Bigelow; Copper Mines N. M. Shurtleff (No 1069) Wright No 1982 (& 1973?) also Nos 788 & 789 col of 1849. Fendler's New Mexican collection No 986.
Some of our spe[illegible] the figure above given ~~smooth or cut~~ or conspicuously [illegible] possibly along to ⊕ utricle extremely [illegible] from the seed.

Do you know this? I have not worked at it – have no the specimens of Mexican [illegible]

2081. [illegible]

Herb. Torr.

Sporobolus ramulosus var glumis non nunquam pilosis

· Sporobolus cryptandrus Gray. Man. Ed. 2. p. 542; Torr in Williamson's Rep. p.

Agrostis cryptandra Torr. in Ann. Lyc. Nat. Hist. N. Y. 1. p. 151.
Vilfa cryptandra Trin. Agrostid. 1. p. 89; Torr. Fl. N. Y. 2. p. 440
V. Trinii Steud Syn. Glum. 1. p. 156 (?)

Texas Wright. No. 1977 & nos 3574 & 941 undistributed
All the specimens of this plant that I have seen except the original one of Dr James' collection have the axils of the panicle glabrous.

"~~Non foliis angustioribus panicula expansa~~" etc Torr in ~~Long's Rep~~

Sporobolus cryptandrus var. glaucescens panicle elongated pliquose – rays short, spreading, few flowered –
Rio Grande Valley, Nov. 5 Bigelow; No 1978 Wright & No 725 col 1849 –
The slender panicle about 1 foot long, rays distant, spreading or reflexed, pedicels elongated, ~~foliage~~ & flowers, as in the type.

⊕

Sporobolus airoides Torr. in Marcy's Rep. p. 300.
Agrostis airoides Torr. in Ann. Lyc. Nat. Hist. 1. p. 151.
Rio Grande Valley Nov. 5. 51. Bigelow; Wrights Nos 1975 & 1977 –

⊕ (Sporobolus cryptandrus.) See page 50.

Var Elutior. 2"–4" smooth, leaves flat or involute 1/2"–1' long. 2–3 lines broad at base attenuate at the apex. Panicle 8"–1' long upper glume mostly shorter than the palea which the upper is usually somewhat the longest, utricle very delicate & ~~not readily separate~~ slowly separating from the truncate seed –
Cooks Spring Bigelow, Nos 1979 & 1976 Wright –
Possibly a distinct species. Specimens in a very young state of what appear to be this were also collected on the Rio Grande by Parry & Schott.

Sporobolus ramulosus Kth. Enum. 1. p. 215 & Suppl. p. 172
Vilfa ramulosa. HBK. 1. p. 137. t. 684; Trin Agrostid. 1. p. 83.
Agrostis minutiflora, Steud. Pl. Glum. 1. p. 171.
Mule Spring New Mexico Bigelow; Copper Mines N. M. Thurber (No 1069) Wright No 1982 (& 1973?) also Nos 788 & 789 col of 1849. Fendler's New Mexican collection No 986.
Some of our specimens quite agree with the figure above quoted ⊕ varies with the glumes ~~smooth or cil~~ ciliate or truncate – smooth or conspicuously ciliate – Wrights 1973 seems possibly belong to a different species.
⊕ Utricle extremely delicate & slowly separate from the seed.

Sporobolus

85 1976 Wright Shed

86. Vaginosus Thurber

87 do Cooks Spring Bigel Shed

88 " Upper Republican Bigel

89 Commutatus - Bigel Shed

90 " Th -

91 1980 Wright Shed

Sporobolus commutatus Kth. Enum. 1. p. 214.
Vilfa Commutata Trin. Sc. t. 10. & Agrostis 1. p. 58.
Vilfa Roxburghii Nees.

Sonora, Thurber no 1045!; ~~Wright 1972~~? Plains between the Burro Mts, Bigelow; Wright 1972?

Our specimens agree perfectly with those of Vilfa Roxburghii Nees, of Wights East Indian collection as well as with the unsatisfactory figure of Trin. It has not been heretofore noticed as belonging to the American Continent (Wrights no 1972, is probably an undeveloped state of the same)

Sporobolus (sp. undetermined)

1968 Wright. ——

Rio Grande, Bigelow; 1974 & 1980 Wright ——

Cooks Spring Bigelow; 1979 & 1976 Wright, Parry, Schott & Greene

= S. cryptandrus var. depauperatus

Agrostis verticillata ~~Willd~~ Vill.; Trin. Gr. Gram. t. 36. & Agrostis. 2. p. 112.

A. dulcis Kth.; Bentl. Pl. Hartweg p. 28

Common throughout Texas & Northern Mexico. River Frontera, Lowa, Thurber. No 358; New Tucson & in the valley of the Gila, Schott; Nos 1984 & 1985 Wright; San Juan de la Vaquería, State of Coahuila, Gregg - also collected by Dr Leidhecker in Texas. (92 Munroe Ex)

Agrostis aparata, Trin. Gram. Unif & Sesquif. 1. p. 207; Gr. Gram. t. 27 & Agrostidene 2. p. 87; Hook. Fl. Bor.-Am. 2. p. 239.

At the Copper Mines & on the River Mimbres, New Mexico, Bigelow; Nos 1969 & 1970 Wright; No 962 Fendler New Mexican Col.

The specimens vary in the relative length of glumes & pulvinus, the size of the upper palea & in the width & length of the leaves. Those collected by Dr. Bigelow at the copper mines have leaves 3-4 lines broad, & in this respect agree with the original plant from Unalaska, communicated to Hort. Tow. by Fischer. Others have narrower leaves & nearly obsolete upper palea and is the state noticed by Hooker l.c. as var. β. None of our specimens have awns.

93 Munroe Copper Mines } Bigel
94 " "

Agrostis scabra Willd.

A. longiflora Richards.

A. Mühlenbergii Trin.

At the copper mines, Bigelow; No 1971. Wright; El Poderoso July 1855 (where?) Schott; also Nos. 3330 & 1603 Berlandier's Collection.

Muhlenbergia glomerata, Trin. Gram. Unif. & Sesquif. p. 191;
Gray, Man. Ed. 2. p. 545.
Vilfa racemosa Willd. Enum. 1. p. 207.
Rivea minutiflora, New Mexico, Bigelow; No 1998. Wright.
Except that the panicle is somewhat more
slender the specimens do not differ from those
of the Eastern States. (95 Munroe)

Muhlenbergia virescens. Trin. Agrost. 2. p. 57 ?
Mountains near the Copper Mines New Mexico, Bigelow.
Our plant agrees with the character except that
the lower glume is nearly as long as the 3 nerved
upper one. (96 Munroe)

Muhlenbergia Berlandieri Trin. Agrost. 2. p. 53.
Mid Rose Pass & near the San Pedro, Texas Bigelow
Wright No 1992. {Has Gray Berl's spec?}
Sheaths & leaves nearly glutinous.
97 Mid Rose
98 San Pedro & c } Bigel

Muhlenbergia debilis Trin. Agrost. 2. p. 49.
Podosaemum debile HBK. 1 681.
[M. purpurea Nutt. Al. Gaul. p. 189.]
Dry hills, San Diego, California, Hartweg (548); Valley of
the Gila, Oct 1855, Schott. (Gronsell Acad Herb.)
(99 Th)

Mr. Calumnyrosthein

Elmer
101 – 1985 Wright
102 – 731 (49) Wright & McCormillamon Berry
103 Mexico Durkenson

Mr. Jepson

104 Head of San Pedro Bay
105 Plains near Cornelio "
106 734 Wright 1849
107 Rio G. near Hubbarton "

Mr Gruelainson

108 Whip-Bugle

Muhlenbergia gracilis Trin. Gram. Unif. & Lesquif. p. 138, Agrost. 2. p. 56.
Podosaemum gracile & quadridentatum HBK. Tab. 682 & 683.
[Calycodon montanum, Nutt. Pl. Gaut. p. 186.]

No 1991 Wright. Collected also by Sitgreave's expedition in the Zuni region & on the Sandia Mts. by Dr Bigelow on Capt. Whipples survey.
Spikelets mostly blackish, the upper glume variously one to 3 toothed. { Connell Hart } { Phil Cand. }
(100 numbers Bing Wrigh)

~~Muhlenbergia longiseta Benth. Pl. Hartweg.~~

Muhlenbergia culcum agrostidea RM. Enum. 1. p. 199?
M. longiseta Benth. Pl. Hartweg. p. 28 (fide Munro Pl. Hartweg. p 347).
Wright no 1989 + A 31987 - What are probably forms of this species were collected at Mt. Carmel Cañon by Dr Parry & in Texas & New Mexico by Dr. Bigelow
+ look at the no. 2 here it. (1985)

Muhlenbergia texana, sp. nov.

Var. Texana, Thurber in herb. [illegible]

Culms geniculately decumbent at base; panicle [illegible], open, rays solitary or in pairs [illegible] long; ~~spikelets~~ pedicels equaling or longer than the spikelets; glumes ~~[illegible]~~ shorter than the palets, [illegible] nerved, [illegible] acuminate; palets [illegible] the lower [illegible] about twice the length + equalled or exceeded by the very acute upper one; Culms [illegible] glabrous.

[illegible]

[illegible] slightly longer, [illegible] panicle [illegible] [illegible] species [illegible] have [illegible] [illegible] produced.

decumbent

foot long.

smooth,

[illegible]

[illegible]

acuminate.

3" long.

open.

[illegible]

pedicels

or equaling

~~[illegible]~~

longest.

the apex

upper

the lower,

[illegible]

[illegible]

(M. Hyscanus)

Culms geniculate, slender, branching above, decumbent at base ~~or~~ or for the whole length, about 1 foot long, glabrous ~~or~~ slightly roughened; nodes smooth, sheaths loose, mostly shorter than internodes, mostly smooth. ligule about 1/2''' long, acute, decurrent. Leaves plane, 1''' broad at base, setaceously acuminate, 1'' – 1/2'' long, scabrous especially above.

Panicle ovoid, included at base, about 3'' long, (green or dark red) ~~rays in pairs~~ & 2'' broad - open, rays (1 1/2'') in pairs or solitary, irregularly inserted, 1/3 - 1/2 naked below; branches 1-3 flowered - pedicels equalling or twice as long as spikelets.

Spikelets 1 1/2'''. Glumes 1/3 - 1/2 shorter than or equalling the palea, narrowly lanceolate - strongly scaburulate ~~about~~ & 1 nerved, setaceo-mucronate, upper slightly longest, scabrous on nerve -

~~lower~~ palea ciliate, the lower entire at the apex & terminating in a ~~bristle~~ about 4''', the upper 2 nerved equalling or mostly exceeding the lower, very acute. Culms compressed, glabrous, stamens 3.

Rio Grande, Rio San Pedro & Rio Concho Bigelow. Presidio del Norte Berry. 199 v Wright & 20734 (1849)

Muhlenbergia distichophylla Kth. Enum. 1. p. 202? Trin. Agrostid. 2. p. 42.

Copper Mines New Mexico. Bigelow. Wright 1990, 1994 (+ 730-1849)

A robust species with remarkably carinate sheaths. In Bigelow's specimens the palea are mostly awnless while a few in the same spike bear long awns. (109 Numero = 1990 Wr)
110 Colre Bigel

Epicampes gracilis Desv. Kel Huenke. ?

Fort Leon Texas. Bigelow; Fredericksburgh Texas Thurber n. 58 - (111 Numero Th)
[not sure about the genus. compare Arists fig & consult Gray]

Muhl. undetermined
112 - Colre oct 21 Bigel
113 Pointed Canes "
114 Colre oct 23/57 "
115 Pointe Camp "
116 2081 Wright Hot Springs.
117 1656 Coulter agrostis?

Mexican Boundary
Grasses —

Arundinaceae

Festuchoreae

Chloridieae

Spartineae

[illegible]

[illegible]

[illegible]

Panicineae

[illegible]

Oryzeae

[illegible]

[illegible]

[illegible]

Cynodoneae

Bouteloueae

(118 Munroe)

Arundo

Banks of Escondido near Eagle Pass. Sept 24/52
Bigelow —

Spike — leaves 1' long 1/4" wide at base, smooth below, slightly roughened above. Spike less than a line long, ciliate. panicle elongated — 2' long 3—4" wide. branches 8—10' crect. scabrous. Spikelet 6 lin — pale straw color. ~~smooth~~ & shining about 4 flowered. glumes nearly equal, 3 nerved smooth except on the keels acute. The upper somewhat longest & acuminate pointed & about equalling the florets. florets, except the uppermost perfect. lower pale hyaline strongly 3 nerved, alternate & 2 fid at the apex. The mid rib prolonged into a short seta. clothed below with copious white hairs nearly its own length, crowded at the base & partially inclosing the upper palea which is about half as long as the lower, hexandrous. ~~pale~~ prominent ciliate on the nerves truncate at the apex & somewhat denticulate. Squamulae 2 (?) fleshy. Styles 2 — Stigmas purple plumose with simple denticulate hairs.

No note is made of the height of the plants — to be compared with the Donax —
Very like Donax Conspicua here.

Phragmites communis Trin

Arundo Phragmites Lin. et Auct.

Along inter-coinies throughout the country specimens occur in all the collections.

Pappophorum boreale Ledeb.; Steud Syn Gram p 200
Torr in Whip. Rep. p. 155.

P. phleoides Nutt.

Between the San Pedro & Hounds Spring Texas.
Bigelow, Mt. Carmel Cañon Pass - Rio
Grande Schott - No 2029 Wright - (& No 751
col of 1849) Chihuahua Mexico. Thurber No 825.
— Collected also on the Plains Estacado
by Dr Bigelow in Whipple RR. Survey. 15 miles
Our specimens vary from 3 ~~inches~~ to ~~feet~~
in height, culms in the larger specimens
branching - Spike lead color - (119 Munroe)

Pappophorum mucronulatum Nees in Flor Brasil p 412?
from the mouth of the Rio Negro. Dr Bigelow;
Wright No. 803 coll of 1849. Collected also by Dr
Gentsell in Western Texas.
We are doubtful if ours is the plant des-
cribed by Nees but in the ~~absence of~~ con-
fusion which exists in this genus we refer it
~~Mono~~ provisionally rather than to multiply
names -
Our plant ~~differs from Nees description in~~ has
a purple color - 1½' - 3' high. Spike ~~about~~
6" - 8" long - glumes 1 nerved shorter than the
florets & mostly mucronulate bifid & mucronulate

florets 4 – the 1 or 2 lowest perfect the others tuberculate. – Lower palea coriaceous with 7 setae & 6 lacinias which are longer than the palea: nerves 7 continuous with the setae, awnless on the back & merging below with white hairs. Upper palea longer than the lower strongly bicarinate attenuate & sometimes bifid at the apex. ~~styles~~ Stigmas purplish with long rough simple hairs. Spikes purplish (120 number)

Cotteria pappophoroides Rh. ~~Bot~~ Gram. 1. tab. 52. Enum 1. p 256 & Hooph. p 200.

Ojo Solcito between El Paso & Chihuahua Thurber; no 2057 Wright.

This remarkable grass does not seem to have been before noticed as a native of North America. The original specimens are from Peru. The stems are about 2 feet high bearing a large panicle & the plant ~~at first~~ has much the aspect of a large flowered Eragrostis. The glumes are very broad, many nerved & 6 flowered. The lower palea about 5 fid with 9–11 aristae of which are longer than the others, & palea & awns mostly simple. Seed free in the pericarp. The excellent description & the details of the figure above quoted leave nothing to be desired. Our specimens perfectly agree with them – (121 number)

Ohio Species

Inflorescence panicled, panicle ovoid dense
spicular 4 flowered the 2 lower nutes. The 3d perfect
uppermost rudimentary long pedicelled. glumes hyaline
membranaceous, ovate, 4 nerved. nearly equalling
the florets. Palea of lower florets coriaceous below
bifid. 3 nerved the central nerve prolonged into a
plumose seta as long as the lacinias. The other
marginal & extending into a mucro. The lower half
on the back & the whole margin pericious pilose,
upper palea delicate. Elongated. bifid, Fertile flower
minutely pedicelled. ovoid compressed smooth & shining
on the back, ciliate on the margin 3 nerved.
& terminates in 3 densely plumose spreading lacinias
as long as the palea - upper palea bicarinate
longer than the lower, attenuate & bifid at the
apex, smooth except on the nerves. involving the
caryopsis which is free. attenuate at the base slightly
wrinkled. with a scutellum half its length, squamu
lae ? — stamens — ? Styles 2, Elongated — Rudiment
upon a pedicel as long as the fertile palea
consisting of 3 plumose lacinias —
a perennial grass 4–8' with indurated fasciculated
creeping stems leaves crowded below. the branches
bearing 2 or 3 involucral leaves with lower sheaths
near the summit — convolute subulate, rigid.
unilateral recurved, terminated by a conspicuous mucro

culm & leaves pale cinerous green persistent - upper sheaths loose striate purplish bright auriate, pilose spikes shining white, glumes sometimes tinged with purplish

Frontera Texas. Bigelow & Batey
No 2028 Wright.

(122 numero)

Prior, volum -

Chloris

124 C. alba Whip. Bay

125 C. verticillata Mesa

126 " " B. arcuatus Th.

127 " " Bigelow Cañon de Spring

128 C. (Bouteloua) Reyesii Cibolo of Rio G. Bay

129 " " hirsuta 2025 Wright Web Tex

Calamagrostis prostratum Rest Rel. Haenke 1. p. 295. tab. 42 f. 2.

Magdalena Sonora Thurber Oct 31 – Presidio del norte, Bigelow Wally 1852 –

Although our plant differs in some respects from that described & figured by Rest we refer it thus without much doubt – To a delicate caespitose group the slender culms of which are often prostrate & rooting at the nodes throwing up a fascicle of leafy stems – The upper sheaths produce 1-3 bracteoles which at base are clothed with a hyaline margin ~~as undeveloped sheaths~~ as long as the sheath – Spikes 4-6 or each racemi, alternate & nearly second – upon a very short pilose pedicel – Spikelets 3 – 2 lateral sessile – upper pedicelled – Lateral spikelets 2 fl – lower glume reduced to irregularly truncate very delicate 1/4 the length of the upper – ~~flower glume~~ ("inferior major" Rest) flowers ~~of the~~ staminate ("hermaphrodite" Rest) Upper spikelet with glumes similar to the lateral ones – 3-4 flowered – the lower two hermaphrodite ("ale fertile" Rest) upper reduced & abortive – lower palea of 4 lacinia & 3 awns – awns flexuose below – the longer than lacinia (about twice as long in Rest's figure) seed tapering at base –

Rest ~~Pilosus~~ it is Calamagrostis not Deyeuxia appears it to Deyeuxia which we think its proper place – The spikes are alternately inserted & become second by the twisting of the pedicels –

(123 Munro)

Chloris alba Kesl.; Torr in Emory's Rep. p. 153

No 2026 Wright; Cooks Spring R. Rio. Bigelow, Valley of the Gila (a dwarf form) Schott. Also No 762 Wright's Col. of 1849.

{ Var Aristulata Torr in Whipples Rep. should be cancelled ~~as that~~ the awns in all our specimens are nearly twice the length of the palea. }

Chloris ~~alt~~ verticillata Nutt; Var B. Aristulata Torr. in Popes Report. p. 176.

Comanche Springs Bigelow; Eagle Pass Schott, Rio Colorado Texas Thurber.

The typical form, which is common in collections made farther north, does not occur in any of those of the Boundary. The variety has much shorter & more densely flowered spikes & awns less than half the length of the palea.

Chloris elegans HBK. 1. t. 149; RH. Emm. Supp. p. 207

Wright No 2027.

Our ~~fine~~ specimens of this fine species have ~~rather~~ shorter spikes than that figured in HBK. Distinguished at sight from either of the above named species by its much longer awns & the copious long white hairs of the margin & back of the fertile palea

## Triplopogon Sub. Gen. - Chloridis.

Spiculae 2 – 4 florae. paleae apice triaristatae.

### Chloris (Triplopogon) Greggii. Torr. Mss.

~~Spikes numerous, erect, slender.~~ Culms fasciculate, compressed at base - mostly smooth, simple. 1 – 3 feet high - Sheaths loose, scabrous, shorter than the internodes - ligule short lacerate ciliate. leaves elongated, flat scabrous on both sides. pilose on the upper surface especially near the base. panicle long peduncled. of numerous crowded erect slender spikes about 5" long – Spikelets sessile. 2 flored, the lower hermaph - upper rudimentary. Glumes very unequal, lower minute setaceously acuminate - upper ~~Obtuse~~ - ½ as long as the florets, 3 nerved scabrous. Obtuse & dentate at the apex with an awn its own length - Palea 2 - subaequal - upper oblong lanceolate, 1½" long, scabrous on the back, minutely ciliate on the margin bearing 3 ~~long~~ slender, scabrous awns 4 times its length. at the apex - Stigmas plumose, seed elongated within a soluble pericarp. Upper floret long pedicelled 3 aristate awns equalling those of the perfect fl.

Bolson de Mapimi, Cuesta Grande & from Rinconada to Monterey. Greggii Rocky & gravelly hills at the Ojitos of the Rio Grande Bigelow. Between Tucson & San Pedro, Schott Western Texas, Wright (No 764 Col of 1849)

Sheaths somewhat carinately compressed.
leaves 6" to 1 foot long - 3" wide at base circularly
acuminate at apex - sometimes conspicuously
pilose at base, culms ~~ascalons~~ near the
panicle which is composed of 20 or more
erect crowded ~~spikes~~ - panicle strawcolor.

This & the following species seem to be allied to Ch.
cornuta Lag. ~~as from~~ the Philippine Islands - as far
as can be judged from the very meager description
given - which is excluded from ~~by~~ the genus by
Rtb on account of its triaristate lower palea -
Our 2 species have quite the habit of Chloris
& notwithstanding the 3 awned palea we
prefer to append them to it to multiplying
genera -

# Chloris (Eriopogon) latifolia

Culms erect simple, glaucescent & somewhat compressed at base - 3-4 feet high smooth -
Lower sheaths exceeding, the upper shorter than the internodes, glabrous except a sparing pilose light at the throat - loose - Ligules a cilate zone.
Leaves 8-10 inches long - 1/2" wide the rounded base & tapering to a setaceous point, flat, scabrous on both surfaces & margins, slightly tuberculate being at base -
Spikes numerous (10-20) aggregated near the summit of the culm - sub verticillate - fastigiate. the lower 6" long - inflorescence many flowered - rachis narrow scabrous -
Spikelets distichous, sessile 4 ft - 13 hermaph. 1 neuter) upper tetrad.
Glumes chartaceous membranaceous - acute, 1 nerved setigerous the upper & outer 1/3-1/2 longer than the lower - more acuted - dorsally scabrous, equalling the
Lemma pubescent chartaceous - oblong lanceolate (lower flowers are exposed) 3 nerved - lateral nerves marginal - all excurrent into setae. the lateral 1/2 - 2/3 as long as palea the central 2-3 times its length as long as scabrous.
Margins ciliate - 3''' long - central seta 4'''-6'''
Upper palea exceeding the lower - entire at the apex scabrous on the nerves.
Fertile floret of a single awned palea
3 stamens -
Ovary oblong invested with a (lower) hexangular (extremely delicate) - styles 2 distinct at base - stigmas purple -

No 2025 Wright — & 763 Col of 1849. also 170 & 1430 Bert

"The inflorescence Must of Chloridum

Cynodon Dactylon Aus. Rth. Enum. 1. p. 259.
+ Suppl. 203; Eng. Fum. Ed 2. p. 554 –
Chocolate Creek. Fagus. Thurston –

Boulelonn!

From the meager descriptions of Lagasca it is difficult to determine what his species are. Both parts B. pinifolia. ~~according~~ The doubtful species of Entrosia as E. ? Lagascae & the restoring of the older generic name of Lagasca - to the three species, which have been separated under Chondrosia, Entrosia &c creates a confusion of synonymy which can only be cleared in a thorough revision of the genus -

Bouteloua curtipendula Gray Man. Ed 2 p. 583.

B. racemosa Lag.
Chloridopsis splendidus Nutt.
Eutriana curtipendula Trin; Kth.

New San Antonio Texas, Wright. On the Lampasas Bigelow.

Nr Aristosia Gray l.c.
Eutriana effusa J D Hooker (fide Gray)
Lampasas, Bigelow.

A form with numerous spikes of 1 spikelet each - palea entire at apex - indument a tolerably acute was collected at head of Rio San Pedro by J Bigelow, but the specimens are too young to decide upon —

Bouteloua hirsuta Lag.; Gray, Man. ed. 2. p. 553
Chondrosum hirtum HBK. 1. t. 58. Kunth
Enum. 1. p. 277 & Suppl. p. 231.
Atheropogon pupillosum Engelm. in Lib. Journ
(when?)
Occurs in all the collections & seems to be
generally distributed in Texas & New Mexico.
No 1625 Coulter – 323 Fremont 2d Col.

Bouteloua oligostachya Torr. ~~in Whipples Report.~~
When first? ; Gray l. c.
Chondrosum oligostachyum Torr. in Emory's Report. p
300.
Atheropogon oligostachyum Nutt. Gen. 1. p. 78.
Copper Mines, Dr Bigelow; No 2023 Wright;
Also by Dr Gregg in Mexico.

Bouteloua eriopoda Torr in Whipple's Rep. p. 185.
Chondrosum eriopodum Torr. in Emory's Rep. p. 124
Near the River Mimbres and at Presidio del
Norte, Bigelow, No 797 Wright (what Col)
& No 2018 + 2019 (1851-52)
The culms of this well marked species are
often decumbent & rooting at the nodes.

130 Mimbres – White Spring
131 " Presidio Bigel

748 Wright in Hist Engelm
950 Fendl.

Wrights

749 B 3 fidw

752 — " "

754 — " "

2020 " "

(also 2021) " "

2022 hum. wrt

(follow polystachya) 60

Bouteloua trifida sp. nov.

Spikes about 4. ~~Glumes~~ many flowered. Spikelets 2 flowered. Glumes very acute upper 1/3 longest mucronate tipped & aristulate. Glumes 2 flowered. Lower fl. hermaph. lower palea coriaceous, ~~mucronately~~ pubescent 1/4" N. obscurely 3 nerved terminating in 3 awns 3 times its length. Upper palea equalling the lower, muticous, inferior flower of 3 aristae, long pedicelled.

Nos 2020 & 2022 Wright 1749 - col 1491; Rio Grande, near Elm Creek. Schott; also Nos 167 & 1427 Berlandier col.

Perennial. caespitose, culms 5-10" high, pubescent sheaths much shorter than the internodes, ligule minute fringed. leaves glaucous, 1" long, narrow, rough hispid especially on the upper surface scabrous on the margin & often pilose ciliate especially below with white hairs longer than the width of the leaf arising from tubercles. Spikes 1/2"-1" long subsessile, spreading or recurved. Glumes pale green or purple - Lower palea of fertile flower minutely ~~pubescent~~ or (in Berlandier) silky pubescent. terminating in 3 long equal setae without any intermediate lacinia. Infecent flower of 3 simple, mostly scabrous awns - as long as those of the perfect flower -

132 Munroe 2022 Wright

Bouteloua polystachya Torr. in Williamson's Rep. p. tab.
Chondrosum polystachyum Benth. Bot. Sulph. p. 56; Torr. in Emory's Rep. p. 154.

Burro Mts ~~in Arroyo Cibolo of the Rio Grande~~ Bigelow; Sonora Thurber; Silver Valley, Short
Presidio del Norte, Parry - No 2021 Wright
~~The Species has a wide range~~. Specimens varying
from 2" to nearly a foot in height.
B. gracilis smaller - culms of lower portion of its length.
Arroyo Cibolo of the Rio Grande, Bigelow; Sta Fe
New Sta Fe. New Mexico Dr Edwards. Lt. Sola.

133 Arroyo Cibolo non B. Bigelovii
134 Burro Mts. Bigel
135 Presidio del Norte Parry
136 Sonora Th.

Bouteloua trichopus

Perennial. caespitose, culms 8"–12" erect somewhat geniculate below, nodes glabrous smooth – leaves filiform, involute sparingly smooth somewhat pilose at base – ~~Spikes about 6~~ common nodes glabrous slender, spikes about 6 short pedicelled – pedicels pubic nodes & glumes hirsute – spikes ½" long flat & flowered – rachis ~~prolonged~~ naked at apex – 1 sterile spikelet 2 fl – lower fl lanceolate acute ⅛" long the length of upper .. 3 nerved – upper acuminate 3 nerved & ciliated on – Fertile fl – lower palea 3 nerved hairy on the nerves & margins. 3 fid at apex lobes subulate entire, upper equalling the lower strongly bicarinate, nerves approximate, acuminate & minutely aristate lfid at apex – stamens 3 – anthers large filaments short – styles dimorphic with very long simple hairs – Rachilla fl, pedicelled consisting of a very narrow 1 aristate palea & 2 very hairy ~~[illegible]~~ nerves – equalling the fertile fl –

Rock Creek July 1872 & Valley of Death Nor – Bigelow – 753 Wright –

Distinguished by its very hairy flowers & its compressed carinate upper palea

137 Murrow, Rock Creek Bigelow
138 — Camp of Valley of Death Bigelow

Bouteloua aristidoides.

Dinebra aristidoides H.B.K. t 695.
Eutriana aristidoides Gth Enum 1. p 280 &
Suppl. p. 233.

Burro Mts 1857 (2) & Arroyo Cibolo Sept 1852 (1) Wright, & 2019 Bourg
Bigelow, No 757 & 49 Thurber.
Schott — Not given
The curious species having much the
aspect of an undeveloped Aristida — our
specimens agree well with the figures
above quoted —

139 Numerous Bigelow Burro Mts.

Bouteloua bromoides Lag. Elench. 5 ?

Andropogon bromoides HBK. 1. t. 52; Entrichum bromoides Kth Gram. 1. 95, Enum. 1. 281 & Suppl. p. 234.

New Mexico, Parry; Texas, Chilmahuma Thurber. No 2024, Wright –

An elegant grass, the specimens from Texas are more than a foot high bearing from 8–10 blackish purple spikes, the lower of which are an inch long & many flowered – It is doubtful if this is ~~the~~ ~~plant of~~ Lagasca's B. bromoides – which Kunth doubtfully quotes as a synonym of Entrichum repens – It is however certainly the plant figured in HBK. 140 Mexico Humboldt & Bonpland; 141 " Texas. Parry.

Bouteloua pinnifolia

Heterostega pinnifolia Desv. HBK. t. 54.
Entrichum pinnifolia Kth Enum 1. p. 281. & Suppl. p. 234.

Rentia de agua, Sonora Schott –

~~Spikes 3 flowered – Bracts hermaphr.~~ Spikelets with 2 hermaphr. fl & a third reduced to a rudimentary pedicel – Outer palea of lower fl – 3 fid. Divisions subulate – Pedicel of the 2d flower deeply 3 lobed central division lifted at apex – all long aristate the central one longest –

142 Mexico Gluck.

The description on pages 58 - 59 appears to be later;

# Bouteloua polymorpha

longistata
macrochaeta

Perennial, caespitose; culms ascending from a subgeniculate base, slender, wiry - 8 - 12 inches high (including arms) smooth - sheaths crowded at the base of the culm - upper shorter than internodes, smooth.
Ligule minute, lacerate -
leaves about 1" long - 1/16" wide at base tapering to and pungent at apex - pilose ciliate.
Spikes about 4 short pedicelled racemes of 1 spikelet each - rachis, scutellate, prolonged into a 1 nerved glume-like point 2/3 as long as the lower glume.
Spikelets many flowered - 2 hermaphr. fl. 2 - 4 sterile.
Glumes lanceolate acuminate. 3 nerved, scabrous on the mid nerve - entire at the apex. upper (outer) exceeding the lower floret -
Lower fl - cylindrical upon a short hairy villous pedicel, enclosing the upper ones - Lower palea 5-6 lines long glabrous - 3 nerved - terminating in 3 long subequal setae which are 2" - 3 1/2" long & minutely scabrous. upper palea equalling the lower, ~~strongly~~ bicuspidate 2 nerved nerves circle on the nerves - margins infolded
excurrent into short setae with a hairy between orange elongated - styles 2 distinct - very long (3/4") villous plumose above - stamens 3 - Lodicules ? - Second floret on a pedicel 1/3 the length of the lower - similar.
Male florets reduced to 3 arms each which equal those of the lower florets - ~~sometimes~~
sometimes ovuliferous

No 2016 Wright & 747 col of 1849 - Collected also at Laguna Colorado New Mexico (?) by Dr. Bigelow in Capt Whipples R. R. Survey.

We have described ~~the~~ what we consider the normal & most common form of this polymorphous & puzzling species - It ~~spreads widely~~ with the sometimes spikelets, much elongated & many flowered - with several of the lower flowers ~~staminate~~ & the palea with very short awns while the upper flowers are as described above or the whole spikelet composed of ~~[illegible]~~ as 20 distant staminate flowers with thin ~~[illegible]~~ or variously awned lower palea - It is closely related to B. multiseta (Entrium) of Nees. from which it differs in its solitary spikelets & much longer setae & ~~Endlicher in his subdivisions of Entrium~~ proposes to belong with Mat. in the subdivision Triplathera Endlich.

14B Nuevo Big Whip Glued & Loose
144 — Puesto de Pueblo Big

Aristidopsis (Sub gen Bouteloua)

~~Spikelets many flowered~~. Spikes 1 – many Spikelets, ~~Rachis produced into a~~ Spikelets many flowered, fl 1 – 2 in hermaph or fem. long 3 aristate. The upper sterile crowded in a ~~many aristate~~ fas cicle of numerous long setae.

Bouteloua (Aristidopsis) polymorpha –

Spikes about 4 - short pedicelled, erect, of 1 spikelet each - rachis prolonged into a glume like expansion - Spikelets many flowered, flowers all ♂ masculine or ♀ feminine on the lower more & the upper fem.

♂ Spikelets - 1" long, glumes lanceolate acute, lower 1 nerved upper 1/3 longer 3 nerved inner ciliate florets distichous, distant, palea membranous lower 3 nerved, pilose at base, bifid & awned or terminating in 3 awns of variable length, upper pale somewhat distant, 2 carinate ciliate bifid on carina, often 2 fid - ovated upwards at base. Stamens 3 - with rudimentary spermulae.

♀ Spikelets - glumes 3 nerved, scabrous on the midnerve alternate or entire at apex - upper longer than fertile fl - lower 1/4 shorter ~~about~~ 5 flowered. 2 lower fl fertile closing each other & the intercent ones. lower fl sessile, palea coriaceous with a pilose tuft at base, 5-6 lines long terminating in 3 subequal setae 2"-3.5" long, upper pale equalling the lower ~~2 nerved~~ strongly 2 nerved & 2 stalked at apex with

Origin below  ovary cylindric and styles 2 longitudinal (3/4") flimsy villous above

Internal fl - 2-3 - reduced to 3 anthers each -

~~Culms 8" 12" high including panicle~~
~~Rhizomes, forming a perennial mass~~
A perennial grass with numerous slender culms short rigid & pilose-ciliate leaves bearing ~~[illegible]~~ terminal cylindrical spikes near the summit.

A polymorphous & puzzling species. The wholly feminine specimens, which are the more common, being very near Entrichia multiseta Nees. It differs from that in its much longer setae to the palea & its solitary spikelets.
Sometimes the spikes are wholly staminate & again with staminate ~~& bisexual~~ below & with merely bifid palea which pass into long awned pulae, with a portion of the at the summit of the spikelet.

Spartina pinciformis Engelm Gray Ill. Lindl. 1. p. 238

Schott no 162
"Common along the Rio Grande"
Also Berlandier's Col. nos 217. 1477 & 3228.

Neurapsis Jamesii Torr. in Ann Lyc. N.Y. 1. p. 148 t. 10 & Marcys Report p. 300; Rusby Mem. 1. p. 285.

Howards' Springs, Rio Grande Valley & Frontera, Texas Bigelow. No 2108 Wright H 766 Col i. 1. 147)
Also 946 Pendleys Rothrocian Collection.
Of [illegible] Thurber no 306.

145 Bunnove - Frontera Texas, Bigel

Pleuraphis rigida (Kansa)

Culms caespitose erect & branching. woody at base - ~~spreading~~ lanose - ~~spikes sparsely expanded~~
Sheaths longer than the internodes. woolly.
Ligule very short. lacerate -
Leaves rigid, convolute or involute, acuminate to lanose pubescent when young, ~~glabrous~~ when older disposes with age - ~~margins smooth~~, upper surface & margins slightly scaly
~~Spikes~~ Spicules slightly exserted or marked by upper sheath at base - cylindrical imbricately densely flowered
Rachis flexuose. scrabbled - notched - smooth
Spikes 3 flowered - situated at the indentations of the rachis & subtended by a copious tuft of woolly hairs, 2 lateral Spikelets fl. ~~staminate central hermaphr~~
3 flowered, staminate, central 2 fl. hermaphr -
Staminate fl. palea oblong-ovate, inequilaterally bifid about 5 nerved - the central nerve produced beyond the bicuspate apex of the larger lobe
the lateral nerve next the axis also prolonged into a seta, silky pilose on the back above & on the margins & apex - axis pilose above the middle pilose below -
Upper palea 3-5 nerved - bicuspate & pilose at the apex - awned on the back from the lateral nerve
Staminate fl. palea equal - the lower 3 nerved somewhat bifid & ciliate at the apex & awned by the prolonged mid nerve - sulcate - notched & ciliate at apex.

Glumes of central spikelet concave, narrow at base, (cleaved) ~~[illegible]~~ deeply cleft in the center into numerous (about 9) arms. The central longest — margins pilose ciliate. Upper glume similar

Palea 2 — stipitate, lower palea 3 nerved irregularly 2 fid at the apex — ciliate at apex — awned from mid nerve, the awns sometimes projecting. Upper palea minutely 2 aristate ciliate

Stamens 3 — anthers large filaments short

Styles purple, plumose twice as long as palea — Gynandrous — bipalate entire.

A stout erect grass with woody branching culms apparently about 2 feet high — leaves of the sterile branches 4"–5" & 1/4"' wide. Those near the spike about 1" wide.

Panicle — 3"–4" long 2"–6" wide — pale purple — differs from P. Jamesii in its habit — its woolly stem. The more numerous flowers in the spikelets — having both palea of the ~~petals~~ stamens flowers awned from the back

+C —

Colorado desert & Fort Yuma

Schott & Maj Thomas —

146 Nuevo Fort Yuma Maj Thomas

= 752 Coulter —

Leptochloa dubia Nees Agrost Brasil. p 433;
Kth. Enum 1. p. 271 & Suppl. p. 224.
Chloris dubia HBK. tab. 694.

Head of Rio San Pedro Nov 1850 & Puerto de Guy-
mas Sept 1852. Bigelow; No 767 Wright's col
of 1849 –
Distinguished by its loose flowered spikelets. which
have 6–8 florets ~~alternate~~ & distichous upon
a zigzag rachis – seeds oblong: concave
on the inner surface – persistent loose –

(147) Nuevo Puerto de Guymas Bigel)
148 — Rock Creek (young state) Bigel

# Leptochloa imbricata.

Perennial; ~~culms & sheaths~~ ~~smooth~~ culm finely, about 2 feet high, ~~terete~~ ~~nodes hairy~~. Sheaths loose ~~scabrous above~~. ~~Ligule elongated~~ lacerate. Leaves 6"-8" long & 2" wide at base, setaceously acuminate, ~~glaucous~~ slightly scabrous ~~on both surfaces~~. Panicle erect, ~~elongated~~ ~~by~~ 8-10" long, sheathed at base or short exserted. Spikes numerous (40 or more) 2" long, slightly spreading, solitary or fasciculate & subverticillate. Rachis slender ~~closely~~ scabrous ~~outwards~~ ~~closely~~ imbricately flowered the whole length with nearly erect acute spikelets. 7-8 flowers. Glumes unequal, lower acute & narrow about ½ the length of the ovate obtuse submucronate upper one which is less than ½ the length of the spikelet, 2" long, spikelet 3" long. Florets imbricate, upper most imperfect. Lower palea oblong obtuse, herbaceous, membranaceous 3 nerved (lateral nerves marginal), denticulately bifid at apex, the central nerve slightly produced, ~~long~~ lower half of marginal nerves long pilose. Upper palea equalling the lower, broadly bicarinate obtuse & denticulate at apex, pilose on the nerves. Stamens 3, ovary short stipitate styles 2, simply plumose, purple. Lodicules 2 broadly cuneate, entire. Seed oblong, ~~faces~~ concave on the inner face, loose in the pericarp.

Moist situations along the Rio Grande, in the Gila Valley. Schott. Fort Yuma. Maj Thomas. Also collected on the Gila by Maj Emory in 1846.

(over)

Flower shewing purplish leaves & panicle pale green — Allied to L. fasciculatum from which it differs in its elongated & many spiked panicle — its appressed florets which are much smaller & its nearly nutrious palea —

(149 Munroe Rio Grande Schultz

150 — Leptochloa Sonora 1086 Fl. = 2044 Wr.

[illegible] — Nicholson —

[illegible] Bikhl — p 28.

Nicholson — [illegible] — p 28. [illegible]

[illegible] Atopi. p 202

Mexican Boundary
Grasses

Gramineae

Festuca
Selgeria
Poa
Aulica
Koeleria
Eragrostis

Uniola
Briza

Koeleria cristata Pers; HBK. Gram. 1. p. 381 & 2. p. 3, 15

Hills near Rock Creek July 4 1852 - & gravelly plains July 24th - No - 2061 Wright -

The var gracilis Gray - which is K. nitida & tatarica Mutt - was collected by Fremont in his exped. 1843-44, a very large form from California, Rev Mr Fitch.

Koeleria cristata var hispida - Panicle loose branches distant below - radical leaves short (2"-3") pale green pilose pubescent -

Copper Mins. Bigelow. (151 Bigelow Mss. Pumice

Eatonia obtusata Gray Man. Ed. 2. p. 558

~~Koeleria gracilis HBK~~

Koeleria pumenlenta Mutt. Gen. 2. App.

Koeleria gracilis HBK in part.

San Elegario Exp. Bigel; No 2060 Wright.

Lower Rio Grande, Palm Laredo, Schott

Miola paniculata Lem: Pth. Enum. 1. p. 425 & Suppl. p. 346.

Sea beach at the mouth of the Rio Grande Nov. 1853. Schott.

Brizopyrum Douglasii Hook & Arn Bot Beechy!; Torr. in Whipple Rep. p. 101!.

Poa Douglasii Nees in Engl. Ann. Nat. Hist. 1. p. 284

P. Californica Steud. Pl. Enum. 1. p. 261.

Sea Beach, Monterey, Cal. April 1850 – Parry.

No 753 Coulter California Col.

The specimens as well as all that we have examined including ~~the original~~ one from Douglas' collection are all staminate with an imperfect ovary – Stems inflated, upper leaves 4" long – lower & Palea pilose hispid on the keel –

Brizopyrum

Miola stricta Torr. in Ann. Lyc. Nat. Hist, N.Y. 1. p. 155!
+ in Emmons Rep. p. 301!

Miola multiflora Nutt. in Trans Amer. Phil Soc. (2 ser.) 5. p. 148!

Hook & Arn.

Bromus speciatus Hook & Arn. Bot. Beechy. p. 403. (Cycl. Uniola strictus Torr. & G. multiflorus Nutt.) Gray Man. Ed. 2. p. 560.

Bromus Michauxii Kunth. Enum. 2. p. 181; Enum 1. p. 325 & Suppl. p. 278.

San Elezario Texas. Bigelow & Collected also by Fremont Exped 1843-44 –
These do not seem to differ in any particular from the plant of the Atlantic coast –

Var strictum. panicle loose – spikelets few – many (14-20) flowered erect – lemas setaceous convolute, Nerves often stiff branches mostly according the culm.
Uniola stricta Torr in Am. Lyc. N. Y. 1. p. 155! & in Marcy's Rep. p. 301. tab 20 Uniola multiflora Nutt. in Trans. Amer. Phil. Soc. (N. Ser) 5. p. 148! B. speciatus Hook Flor. Bor. Am. 2. p. 255 in part.

~~The Uniola strictus Torr.~~ was founded on an specimen Along the Rio Grande at San Elezario & Frontera ~~Bigelow~~ & Bigelow, in the Gila region Schott & Thurber, No 2033 Wright –

~~Before~~ a careful examination of a large number of species he fails to find ~~any good~~ characters ~~to~~ sufficient to warrant us in keeping this as a distinct species – Though some forms appear very different from the type ~~&c~~, it was upon one of the most widely differing forms that the Uniola strictus Torr. was founded – The spikelets florets are at least twice the size the texture of the palea firmer & the leaves more generally erect than

in the plant of the Eastern States - but in our very full suite of specimens we find every intermediate state ~~in part of the ordinary~~ between the two. Like the type this is monoecious - ~~that~~ possibly polygamous as in some of the staminate flowers we find ~~an~~ well formed though small ovary - the pistillate plant also bears rudimentary stamens at the base of the ovary. There is the same difference in the palea of the staminate & pistillate flowers as exists in B. spicatum - none of the former being less compressed - 2034 & 2043 Wright are intermediate forms.

152 - Red River - Nuttall
153 Rio Grande Bigel
154 Rio Grie Th
155 San Benguria Bigel

Melica mutica Walt.

var diffusa Gray. Man. Ed 2. p. 558

M. diffusa Rosth

M. scabra Nutt. Fl. Ark. Terr. in Trans. Am

Phil. Soc. (2 ser.) 5. p. 148.

M. glabra Torr in Marcy's Rep. p.

No 2062 & 2063 Wright – Mexico, Schegg –

Melica

San Diego, Parry –

(To be compared with M. Californica Nutt. Fl. Sept. &

M. imperfecta, Trin – = Koeleria pomeformis Torr. in herb.)

156 Munroe – all the stock of Herb Torr,

Bromus unioloides ~~Willd? H.B.K. 1. p. 151?~~ Nees. Agrost. Brasil. p. 470 –

Ceratochloa unioloides Beauv. Agrost 75. t. 15. f. 7.

Bromus willdenovii Kth. Gram. 1. 134 & Enum 1. 416? –

Texas. Wright, Lenemouth – collected also by Capt Pope – There seems to be ~~some~~ confusion respecting the synonymy of this species which probably comprises several nominal ones – If the width of the foliage & presence of a short awn are the only characters which distinguish ~~separate~~ B. (Ceratochloa) brevaristata, Hook – Fl. Bor – Am that two must be added to the list of synonyms – as ~~for~~ we find in the same specimen & even in the same spikelet, some florets with longer & others having a distinct awn as figured by Hooker – palea merely acute

Bromus carinatus, Hook & Arn. Bot. Beechy. p. 403?

Copper Bonis, Brazeau ~~p~~ no 2066 Wright ~~a single specimen in a bad state of what appears to be this species~~,

| | | | | |
|---|---|---|---|---|
| ~~Ex~~ 157 | Monroe | 2065 | Wright | Hitchcock |
| 158 | " | 2068 | " | " " |
| 159 | " | 2068 | " | " " |
| 160 | " | 2069 | " | " " |

Bromus grandiflorus (Hookeri)
Cerutochloa grandiflora Hook. Fl. Bor-Am. 2 p. 253 tab 235!

Sierra Preita (neue Spezies?) Schott – Fremont no 450. 1846 – California Chas. Fitch –
(Name must be changed? – There is a B. grandiflorus C. Koch – in Linnaea XXI p. 418 –)

Bromus

Nos 2065 – 67 – 68 – 69 – Wright –

Poa

Annual - 6 inches high - culms & sheaths smooth
leaves 1-1/2 inches long - 1/16" wide acuminate pointed
slightly scabrous on the margins - plane - not
rigid -
Panicle contracted. branches mostly in fours &
longer than the other - capillary - scarcely scabrous
bearing 2-5 spikes
Spikes much compressed. broadly ovate short
pedicelled pale green - rarely reddish - 3-4 lines
long by 2-2½" wide. 6-8 flowered -
Glumes compressed carinate - lanceolate, nearly equal,
upper somewhat longest margins scarious -
scabrous on the keel - upper 3 & lower 1 nerved.
Lower palea acutish - ~~obtuse~~ scarious at the
apex & margins, somewhat rigid, conspicuously
silky villous on the midnerve 2/3 the length &
on the lower half of the marginal nerves -
intermediate nerves indistinct, ~~obscure~~ obscure at base,
upper palea 2/3 as long as lower - scarcely
villous on the nerves -

Stamens 3 -

Wet meadows Organ Mts, April Bigelow -
Nos 258 - ~~258~~ - 2040 Wright - Rio Pecos, N. Mex
a larger form a foot or more high 105 &
255 Wright -
No 931 Fendler seems to be the same thing but
that is perennial

This is nearly the same grass as specimens in Herb. Sou. from Gates, Fletcher & Jewett. Mobile - marked "Poa annua vulgaris" & "Poa regidra Ell?" Lowndes Co. R. C. Dr Hunter - & specimens from Chapman of which Gleason says "I can make only P. annua" -

Rest was P. secunda & P. cuspidata - from Ohio which seem to be near Poa annua or varieties of it - What is P. regidra Ell?

161 - Hylas de Th
162 Oryza Nuts Bigel

Poa lanosa

Seems perpetuate snow Fremont Rowley

Not Exped - 1842 - Aug 15 -

Poa alsodifera

seems to be monoecious & the pistillate forms more cuneiform -

2142 Wright -

Perennial, caespitose, clothed at the base with marescent sheaths. culms compressed rigid rough - a foot or more high. Sheaths rough receding the nodes - Leaves short-truncate - Leaves of the sterile shoots 2/3 as long as or equalling the culm: convolute setaceous - rigid - scabrous - ~~often~~ recurved. Culm leaves short - 1/2" - 2" long. the upper ones very much reduced or wanting.

Panicle about 3" long contracted or expanded when old but often included, branches in pairs or in 3s - distant & with the common rachis scabrous. more or less naked below. Spikelets 3-4 lines long - somewhat flattened 5-7 flowered. mostly diœcious - glumes lanceolate acute, upper nearly as long as the florets - lower smaller lower 1 upper 3 nerved scabrous, pubescent & rough on the keel - top tree papyraceous except around the midnerve - lower palea blunt - 5 nerved, intermediate nerves faint - villous pubescent on the lower half of the middle & marginal nerves; upper palea nearly equalling the lower - broadly 2 cuspidate somewhat truncate at apex - ciliate hispid on the nerves.

Stamens 3 -

Ovary glabrous. styles 2 plumose nearly to base - Sq = 2

Grain adherent to palea?

Seems to be perfectly diœcious - the staminate fl have the lower palea more acute & the upper somewhat 2 fid -

Copper Mines, Organ Nts, San Diego (on the Rio Grande near Doña Ana?) Bigelow, — Sta Cruz County — No 251 Wright — 2041 a smoother form of same?

Also? 932 Fende — which have some of the palene serrulate at tip? —

Plant pale glaucous green —

probably near P. Koelerioides, Nutt & Danthonoides Steud — See Gillies Bows —

| | | | |
|---|---|---|---|
| 163 | Nuevo | Organ Nts | Bigel |
| 164 | " | San Diego | White Bigel |
| 165 | " | Sta Cruz Sonora | Berry |
| 166 | " | Copper Mines | Bigel |

Eragrostis Mexicana Nees Agrost. Bras.

p. 503 ?

Near the Lemspin Tag & Copper Mines Sen
Mex. Bigel – no 2048 & 2049 Wright –
The specimens agree tolerably with Nees's
description of this polymorphous species –
Bigelows specimen are nearly 3 feet high
with a spreading panicle ~~about~~ a foot or
more long – Spikelets of the lower branches
2–3 flowered those of the upper about 10 –
Glumes scabrous on the nerve – palea ~~obscurely~~
Grained – Ovaries ~~is~~ smooth on the back –
167 Number – Color Bigel!

Eragrostis Neesii ~~Desvaux~~ Schrad! Eragrostis
Ed 2. p 564 –
Minutes Bigelow 2951. & 2052 Wright –
(?37 Fadl?) (no 2047 Wright a form of this?
& to be compared with E. Frankii Meyer)

A delicate slender annual from Lemspin –
Bigel – is it a state of Neesii ?? – what to do
with it – do – 2046 & 2053 Wright –
168 Lemspin Bigel

Eragrostis repetens – Nees in Flora Brasil 2 p 514 – Kunth Enum. Ed 2. p. 563 –
Poa Repetens Michx Flor. 1. p 69. t 11.
Poa Eragrostoides Lam. Ill. (fide Nees)
~~Poa capitata Mutt~~
~~Poa capitata~~ (See Torrey Flora & Poa capitata Mutt in Trans Am. Phil Soc N. Ser. 5. p. 146.) –

Texas & along the Rio Grande, in all the collections – Nos 895 (194) – 2325 – Berland – 308 & 320 Drummond 1st & 2d Col – 2045 Wright – Reynosa Mexico Gregg –

The specimens all of the capitate form – varying as to acuteness ~~of palea~~ – the and relative length of palea – the ~~staminate~~ florets have the upper palea frequently as long as the lower – ~~the~~ the pistillate it is usually ~~about~~ half as long – In some of Wright's specimens the spikelets are fully 1½ inches long with about an hundred florets – sometimes softly pubescent throughout –

Eragrostis oxylepis Torr. in Marcy's Rep. p. 301 ~~tab XIX~~ - (Sub Poa) Pl. XIX of Whip. Rep. p. 156 -
Poa interrupta Nutt - Trans. Am. Phil. Soc. (N Ser) ~~5~~ 5. p. 146. non Lam.
Eagle Pass & Lamedo Schott -

Eragrostis Poaeoides Beauv - Non Meyer Lachgr
Gray - Man Ed 2. p. 563 -
Poa megastachya Lamk -
Various places Sonora & Chihuahua Thurber
- Mexican Schott - Rio Gila Gray 1846 -
nos 864 - 2284 - 2570 - Berlandier -

Eragrostis alba Kunth. Nov Humboldt 1. p. 279?
Kern River California Dr Bluke -
Imperfect specimens of what appears to be this species - remarkable for their very pale spikelets & minutely spiculate palea -

Glycerin? — Pimpes Hook.

Adventitious — Collins numerous from a long creeping rhizome, about 1½ feet long, stouter longer than internodes, midribs prominent — filiferous at apex — & view the lower pairs flaccous stem — long — ones alternate & crowded at the base of culm — rigidly short fruitbearing —

Leaves coriaceous persistent, about 2 inches long 1–2 lines wide at base tapering to a somewhat rigid & pungent apex — very strongly prominently nervous above mostly flattened below — Most of the lowermost sheaths very short & spineless

Panicle erect — branching compound, branches somewhat — spreading, distinct — solitary on the lower fasciculate in 2–3 — ~~at~~ the lower pilose in the axils

Spikelets very short pedicellate — ¼" long, numerous about 10 flowered, lead colored — glumes ovate acute strongly 1 nerved — lower smaller — ⅔ length of lower floets — ~~floets~~ Lower palea broadly ovate stiff or subacute — bounded on back — strongly 3 nerved coriaceous — Reticulations Brooks, upper broadly bicuspidate slightly scabrous on nerves — equalling the lower —

Stamens 3 — Stigmas plumose with branching hairs

Grain 2 — truncate —

Lagunas de Sta Maria Chn — Bigelow.

193 Wright —

169 Munroe Lang Sta Maria Bigelow

Glycerin vermiter Fir
Low grounds valley of Matilija [illegible]
Thunder -

Festuca microstachya. Nutt. Ms. Gerard. in Jour. Acad. Phil (n. ser.) 1. p. 187 — ; Torr in Whip. Report p 156 —

Dungs Ranch — Gerard. ~~Tuna~~ & Dry Hills San Diego — These from the former locality are well developed — Those from the latter are slender plants 3—4 inches high —

Festuca tenella Willd. Sp. 1. p. 409 ; Kunth. Enum. 1. p. 397.

Copper Mines R. Rep. Bigel — Nearly like the plant of the Eastern States —

Fn. aristulata Torr. in Whip Rep. p. 156.

Frontier Texas. Bigel. Donna Thurber. A Black Water Spring Parry. 2036 Wright? — also by Capt Pope —

Here ~~they~~ the specimens which we regard as the as forms of F. tenella are mostly dwarfed in habit & with the awns ~~very much side~~ varying in length — ~~some~~ some very much reduced or wanting.

Scincus dactyloides Gray Zool. 1. p. 165.
Var. in Dumeril Rept. p. 154. t. 10, & Whip. Rept. p. 157.
Habitat Sc. Bigle — Mr. Wright.

Mrs Bowdy Kupis

Alnwick

Aira
Trisetum
Anthoxanthum
Avena
Trisetum

Aira (Deschampsia) elongata Hook. & Arn.
Ann. 2. p. 243. tab. 228; Torr. in Whipp. Rep. p. 155.

California. Rev. Mr. Fitch & Clear Water Oregon
Rev. Mr. Spalding

Deschampsia elongata Munro. Ch. Benth.
H. Bartney. p. 342.

Hooker seems to have overlooked the plumose
ornament noticed by Torrey, which is in some
specimens nearly as long as the floret.
All the specimens we have examined
have 3 stamens save those collected by
Dr Bigelow in Whipple's Exped. which have
but one. The older states of the plant
have the branches spreading & the aspect
is very different from that of the young
specimens where the branches are erect
941 Festuca D. spicata

Danthonia spicata ~~Beauv.~~ R. & S. (Beauv. Acad. Prog.)

Var. Lupa — 1850 - Parry —
Spikes ~~2-4~~ — long pedicelled, spreading. Glumes much
exceeding the florets — lower palea glabrous except
a ~~pilous tuft~~ mid nerve on the margin near the base. There is a tuft of very hairs
acuminate — not aristate — awn as long as the
palea — somewhat scabrous —
We cannot consider this as specifically distinct from
the plant of the ~~Atlantic~~ Atlantic States. New Jersey
specimens in Herb. Torr. have very nearly as loose
inflorescence —

(170 Munroe) Mr.

Deleuria & megastachya nitrous acid - leptodont stalks 2-3 feet high
lower branches of panicle 2" long
spikelets 3/4" long plains of Columbia

Aira (Deschampsia) elongata Hook. H. Bor.
Am. 2. p. 243. tab. 228; Torr. in Whipp. Rep. p. 155.

California, Rev. M. Fitch & Clear Water Oregon
Rev. M. Spalding

Deschampsia elongata Munro. Ak. Bentk.
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specimens where the branches are erect

Avena Nuttalii Beauv.

Monterey Cala. May 1850. Parry

~~Specimens have all 3 spikes radi-
ate that the flower palea is pilose on
margin only and its lobes are somewhat
ter. They do not differ from those
the eastern states.~~

Trisetum Tolucense Kth. Gram 1. tab. 60 (Sub. Avena)
& Enum 1. 296 & Suppl. 248 tab. XIX f 2.

Texas, Wright & Lindheimer

The nearly allied T. deyeuxioides Kth. was collected in Mexico by Mr Parkinson.

171 Nueuve Lindheimer

Avena fatua Linn; Kunth Enum. 1. p. 302 & Suppl. p. 256 — in Calif. Parry & Thurber San Diego & other places.

Trisetum purpureum, Gray Man. Ed. 2. p. 556. Avenopsis purpurea, ~~Nutt~~ & aristulata Nutt. Gen. 1. p. 62

Texas, Wright; Drummond's 3d Col. no 330.

Trisetum Leskeroides Torr. Fl. N. Y. 1. p. 118. Avenidovina pacifica Nutt Gen. 1. p. 70. Avenopsis cupreus Kunth Enum. 1. p. 318 & Suppl. p. 275. Gram. tab. 68 &

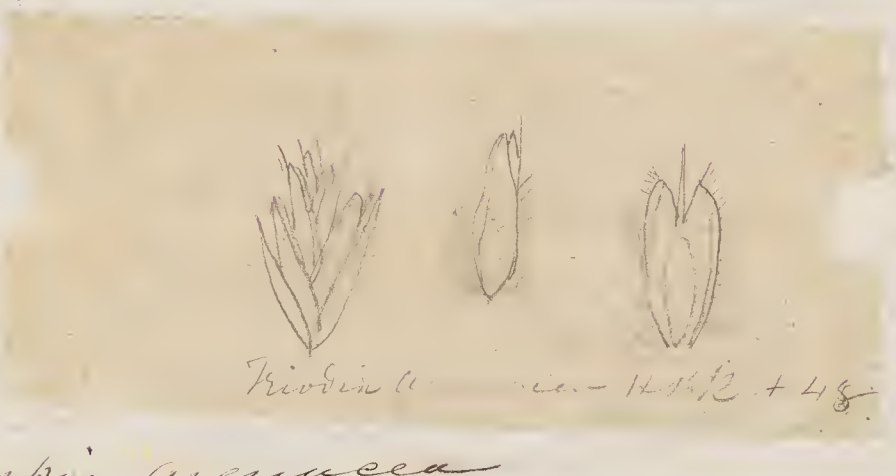
Rio Grande, various places, Schott. River Leon, Texas — no 2055 Wright — also in Western Texas by Dr Antisell —

The specimens by Dr Bigelow & Schott are diminutive, those by Wright nearly as large as the plants of the Eastern States, the culms in all ~~somewhat~~ pilose pubescent especially above.

(ask Gray to examine Wright)

Trichopis nutica

172 Boigel White original
173 2046 Wright,
174 2064 "
175 779 " col 1849




Trichopis avenacea

Kralepis avenacea Kth. Gram. 1. 108 & Enum Suppl p. 274.

Triodia avenacea H.B.K. 1. t. 48.

(No 787. Wright. col 1849 –) El Paso. Texas Thurber. April.

178 Muscol Hort Bon. 781 Wr 1849.

Fucus pis mutica Torr. in Whipples' Rep. p. 156.

Texas. Wright. nos 180 - 291 (what col?) ~~+ 20~~ + 2046 (~~or 2046 lad figures~~)

Nos (?) Longer in all its parts - scabrous - sheaths & leaves pilose - branches & panicle elongated [pulose sometimes] [panicle] - No 2054 Wright - a form was collected also by Dr Antisell intermediate between this & the typical one - Culm 2 - 2½ feet high panicle 8" long.

Fucus pulchella Torr. in Whip. Rep. p. 156.

Nondepis pulchella Kth. Enum. 1. p. 318 & Suppl. p. 274 Zizania pulchella H.B.K. 1 t. 47.

From the Rio Leon Texas. along the Rio Grande & Eilse to Fort Yuma by all the collectors.

~~(To precede Aena)~~

~~Zizania deyeuxioides Kth. Enum. 1. 102 & Enum. 1. 297 & Suppl 251.~~

~~Texas. Wright.~~

~~Nos~~

176 Texas Jh

177 Leon Spr. in Bigel

[illegible] humilis.

Culms caespitose, simple, [illegible] [illegible] single spikelet, which bears a very short leaf. Panicle [illegible] ovoid, spikelets subsessile, 8–12 flowered; glumes acute 1-nerved [illegible] carinate; compressed [illegible] entire [illegible]. ~~[illegible]~~ lower palet compressed [illegible] 3''' long, [illegible], membranous, 3-nerved [illegible] [illegible] as a [illegible] [illegible] [illegible] long as palet; [illegible] [illegible] upper with a [illegible] [illegible] [illegible]; upper palet ovate obtuse 1/3 shorter than upper. Stamens 3, [illegible] stipitate, styles [illegible] [illegible] [illegible] 2, [illegible], seed free [illegible] [illegible] [illegible] its length.

761-[illegible] 2058

[illegible] [illegible] [illegible] [illegible] 715!

A most beautiful species growing from 6 inches to [illegible] in height, with somewhat compressed [illegible] [illegible] which are often [illegible] [illegible] [illegible] the [illegible]; [illegible] [illegible] [illegible] [illegible] than the [illegible] [illegible]; [illegible] [illegible]; [illegible] compressed, with [illegible] ~~[illegible]~~ plume [illegible] [illegible] [illegible] pubescent in both [illegible], rigid, distinctly 3-nerved [illegible] [illegible] [illegible] 2''' [illegible] [illegible] Panicle ~~[illegible]~~ 1–2'' long with a few [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] ate on the [illegible] [illegible] ~~[illegible]~~ [illegible] [illegible] but [illegible] stipitate [illegible] [illegible] [illegible].

Fucuspis

Culms cues pubere compressed, slightly scabrous or pilose below, rigid 6"–10" high, ~~obliquely~~ & somewhat geniculate at the solitary node red. pilose above. Sheaths short 1/4 the length of the internodes, striate compressed carinate, smooth except at the throat where it is furnished with a pilose tuft – ligules minute, ciliate lacerate, leaves plane or cariniculately folded – rigid conspicuously 3 nerved – 1 central 2 marginal, pilose pubescent on both surfaces – scabrous on the margins, scarcely attenuate obtuse & mucronulate at the apex – radical about 2" Prove of the culm about 1/2" Panicle contracted, ovoid, branches alternate, appressed, erect – 1–3 flowered – as well as the common rachis hairy – spikelets subsessile – ~~oblong~~ ovate – many 10–14 flowered 3/4" long compressed – glumes membranaceous 1 nerved, carinate, acute, somewhat distant on the rachis – the upper longer & slightly obtuse, scabrous on the nerve – both shorter than the lower flower – flowers distichous, the densely bearded rachis readily separating into joints. – lower palea compressed carinate 3''' long – acute, membranaceous 3 nerved – the ~~lateral~~ nerves green, intramarginal not prolonged – the central prolonged beyond the apex into a setae about 1/4 the length of the palea which is denticulate at apex & scarcely tipped, palea densely silky pilose below – the marginal nerves being a silky tuft near the base – & pilose above with an intermediate naked space – upper palea ovate obtuse, bicuspidate conformed to the lower – pilose ciliate on the nerves, stamens 3 – ovary stipitate styles 2 plumose with simple hairs, squamulae 2 – fleshy – truncate, seed oblong smooth & shining

scutellum nearly half its length — the albuminous portion translucent, except the veins. Leaves pale green — palea mostly white, sometimes slightly tinged with purple —

Leon Springs Sept 7. & July 24 1852 Bigelow also by Pope — Mich 24 (vestiges) No 2058 Wright & Sex col 149

~~Does not agree with F. arenacea HBK.~~
~~Must have 6 flowered spikelets with glumes equally~~
~~the form of & deeply 2 fide palea~~

Near F. arenacea, with which it was mixed in the distribution of Wright, Col 1849 — readily distinguished from that species by its larger & many flowered spikelets — & its broadly carinate & acute & mostly entire brown palea —

174 (Bigel Leon Spring)

# Nodaceae

Lilium
Triticum
Elymus
Hordeum
Sitanion

Kitchen repairs

181 Nuns 2072 Wright

182 — Copper Mines Bigel

183 — Lumpin "

Bromus tectorum Linn. Spec. 122; Kth. Enum. i. 437.

San Diego. Vasey. A short awned variety collected in California by Dr Andrews. Introduced(?)

(180) H. —

Triticum repens Linn l. c.; Kth Enum 1. p. 466, Hook. Fl. Bor. Am. 2. p 254 —

Various forms of this variable species in all the collections from Texas to Oregon —

Triticum caninum Schreb. — Var β. Gmelinii Ledeb. Fl. Ross; Hook. Fl. Bor. Am. 2. p 254;

T. divergens, Nees, in Steud, Syn Pl. Glum. 1. p. 347?

Copper Mines, Boyslow; Oregon Rev. Mr. Spalding. This seems to be an esteemed pasture grass in Oregon — Mr Spalding, a missionary who collected some years ago at Clear water sends the following note with his specimens "Common Bunch Grass of Upper Oregon, superior to any in the world; stalks usually 2 feet high and green through the winter, often eight inches high in March"

181 in 181 numbers, Spalding.

Elymus Canadensis, Linn; Kth Enum 1. p 450,

in all the collections are forms ~~[illegible]~~ which in the present unsettled state of this genus are refer to Canadensis —

Hordeum pratense Buds; Pth Enum 1. p 455;
Torr. in Whip Rep. p. 157.
H secalinum Schreb. H. adscendens Kth.
(Fide Munro, ex Hartwig)
California Nr. Fitch.

Hordeum jubatum Linn; Gray Man. Ed 2. p. 570.
Lake Sta Maria Bigel; No 974. Wright.
The awns much shorter than in the Northern form.
185 Munro Lake Sta Maria Bigel —
186 " 974 Wright

Hordeum pusillum Nutt. Gen. 1. p 87. Gray Man
Ed 2. p. 507 —
Rio Grande Bottom at El Paso Bigel. No 2078 Wr.
San Diego Cal. Parry.
This as Gray remarks is very near H murinum
in Britt — but our specimens of the latter
are not sufficiently perfect for a critical
comparison — H. Richii Steud Syn Gram 1. p. 352
is probably this species. 184 — Munro El Paso Bigel

Sitanion Elymoides Raf in Jour de Phys 89. p 103
Steud Syn Pl. Glum. 1. p. 351; Torr in Whip Rep.
p. 157.
Elymus Hystrix Nutt. Gen. 1. p 86.
Elymus? Sitanion Schult. Mant. 2. p. 426.
Polyanthesis Hystrix Kies in Linn Nat Hist. 1. p.
284; Hook & Arn Bot Beechy p. 404; Steud l.c.
p. 356.

Situation

187 — Copper Mines Bigelow
188 — Camp Bonche "
189 — San Diego The
190 — Calif. Tickets

California Minden, Utah

B. Glumes & palea mostly entire.
Various localities Texas & New Mexico Bigelow
2076. Wright - 903 Fende, Fremont -
This is ~~a very variable species~~ has a very wide range & is very variable, the extreme forms of this would be taken for distinct species - the specimens from California ~~have~~ multiflora glumes and the palea acute - while most of those from ~~east~~ of the Rocky Mts have entire glumes & palea & do not differ from Elymus except in habit, intermediate forms however connect the two.

<u>Bromus hyperborus</u> Torr. Mex Rep. p. 158.
Crypsis hyperborea Gmel. Sen. p. 49.
No 2080 Wright. No 894 Fend New Mex Col.

191 Mundt Sonoma Co
Bigel Whip.
192 —

# Andropogoneæ

Trigonocarum
Maniburnia
Sorghum
Andropogon

# Rottbollinaceae

Tripsacum dactyloides Linn; Wh Emm 1. p 469.
Rock Creek & Pecan Creek Texas Bejeloni River
Leonn Lehodt – Llano Estacado Pope –

Muhlenbergia granularis Swartz; Wh Emm 1. p 469 –
Mu – stem slender – leaves short – plant 4–8 inches
high –
Hills Star Cring Thurber; no 2097 Wright
193 Muhlenbergia granularis Th.

2 Trachypogon macroglossus Trin. Andropog. p. 257

Texas, Drummond. no 342. 2d Col.

Our specimens of this beautiful grass agree with an authentic Brazilian specimen from Trinius except that the leaves & sheaths are glabrous.

1 Heteropogon ~~contortus~~ Stirtus Ro; Trin Andropog. p 255

H. contortus R&S. (teste Trin)

Andropogon contortus Linn; Kth Enum. 1. p. 486.

Rio Grande Brazil, Schott; Cooks Spring Wheep Brazil. Fort Inge Ruby, Sonora Thurber no 2099 Wright (& 809 col 1849)

~~This species which varies in various~~ Actually forms of this differing in width of foliage & ~~pubescence of~~ hirsuteness of glumes have been described under other names but we have not the means of identifying them.

194 Munroe - Sonora Th. 195 Rio G. Brazil.

Andropogon candidus Trin. Andropog. p. 260.

Elionurus ciliaris Nees. (fide Trin)

mountains of the Serapia Brazil ro; no 2106 Wright & no 804 (col 1849) 196 Munroe. Serapia Braz

Andropogon Nuttallii Chap. Mss.

Rottboellia ciliata Nutt. Gen 1. p. 83.

Texas Drummond 3692 2d Col & in one of Wright's earlier collections.

This belongs to Andropogon § Eleionurus rather than to Rottboellia & we adopt the name proposed by Dr Chapman.

Andropogon Leopurius Michx. Fl. 1. p 57.
A. distiflorus Michx l.c.; Trin. Andropog. p. 267.
Rio Grande & other localities Bigelow, Schott,
no 801 Wright (1849)

Andropogon furcatus Schrad; Trin. Andropog. p 271
(Key Grotes Hills & Rankl) by Vasey.

Near Painted Cañon on the Canjilon & Rock Creek, Bigelow — a very large flowered form which may be another species — 197 Nuevo Paraíso Canyon Bigel

"Andropogon [illegible] ? Brad. [illegible]" [illegible] —

Hills near the Mimbres, Bigelow, no 2104 Wright,
Near furcatus but differs in the very narrow coming (not channelled) glume of perfect fl — 198 Nuevo. Mimbres Bigel.

Andropogon macrourus Michx. fl 1. p 75; Trin Andropog. p 280.
Near the San Pedro River, Bigelow; no 2100 Wright. Gila Valley Emory; nos 491 & 500 Berland.

Gr. Ney, Nov. 1925 -

Andropogon

A glaucum Torr in Ann. Lyc. 1. p 153 (non Nutt.)
A Jamesii Torr in Marcy's Rep. p. 302. 2102 ?
A Torreyanus Steud. Syn Glum. 1. p. 392. (or 2103 ?)

San Antonio & Rio Grande Bigelow & Schott - (~~2103~~) Wright
Sundris Rey. California Berg. also 444 & 1764 Berland.
Origin Grande Berg - Corpus Christi Berg Austin.
This which we have from South American, extends
to the Canadian River (Jones) & from the Gulf of
Mexico to the Pacific & is probably an old
species - Cf A hyparrhoides DC. 199 Bigel White
200 Rio Grande Bigel
201 2103 Wright

Andropogon argentatus DC. ?

A Jamesii Torr in Marcy's Rep.
2402 Wright; W. Tex. Austrella, Red River Marcy
348 & 2378 Berland -
Very near the preceding; distinguished by its fewer
~~ribs~~ & more villous spikes & the conspicuously
imbricate nodes - 202 2378 Berland
203 Marcy

Andropogon Gerardi Vitm (?)
A. avenaceus Michx
A. ciliatus Ell
Sorghum nutans Berg (an Sorghum ?)

This widely diffused group occurs in all the
collections, (2098 UR)

Sorghum vulgare Pers.

Colorado Riv Cal – Parry.

One of the varieties of the common Broom Corn probably cultivated by the Indians of that region.

Imperata

Rio Grande Bigel, No 2101 Wright, 283 Rand (2d or 3d ? col) –

Ischæmum arundinaceum or I Brasiliensis Kunth Andropodon. p. 331.

2024 Rio Grande Bigel

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Index II

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# Grasses Collected by Potter at Orizaba. Mexico

| | | | |
|---|---|---|---|
| No. 134 | Orthopogon setaceus Nees: | | Wittrock numbers. |
| 131 | Setaria glauca P. de B. | (1) | Paspalum plicatulum Michx |
| [redacted] | | (2) | Pasp: conjugatum Berg. |
| | | (3) | P. lentiferum? Lam: var folis subsericeis Same as Pendlia 1714 |
| | | (4) | Digitaria sanguinalis var marginata |
| | | (5) | Panicum dichotomum L. |
| 157 | Paspalum conspersum Schrad probably a form of P. virgatum L | (6) | P. dichotomum ? L. spicatis subglabris |
| | | (7) | P. divaricatum L. |
| [redacted] | | (8) | P. glutinosum Sw: |
| 165 | Ar: vestaris Kies | (9) | P. virgatum L. |
| 167 | Andropogon (Amphilophis) laguroides DC. | × | [redacted] |
| | | × | [redacted] |
| 168 | Anatherum bicorne P. de B | × (12) | Berchtoldia bromoides Presl |
| 169 | Oligomeris ciliaris HBK. | (13) | Muhlenbergia diffusa Schrad: |
| 171 | Schizachyrium sericeum Kies | × (14) | M. ciliata Trin: |
| 179 | Muhlenbergia capillaris Trin. | × (15) | M. mihi ignota fortasse M. sylvatica habeo subsp. chiis bistra |
| 180 | Lycurus phleoides H. et B. | × (16) | Agrostis mexicanus Presl |
| [redacted] | | (17) | Agrostis perennans Pers: |
| 188 | Panicum (Virgaria) laxum Sw: | × (18) | Sporobolus nov: sp: ? an S. orizaba Rupr. |
| 193 | Sporobolus purpurascens Han var folis non ciliatis | × (19) | Perezia erinitum Presl |
| | | × (20) | Rhynchospora nov: sp: intermediate between R. confusa and R. uniseta. |
| 709 | Rhynchospora geminiflorus HBK. | (21) | R. geminiflorus (No: 709) a very young state |
| 718 | Echinochloa Crus Galli L | (22) | Olyreae indica Gaertn: |
| 724 | Bromus ciliatus B. aspen. | (23) | Trisetum deyeuxioides HBK |
| 729 | Eragrostis obtusa Presl. | (24) | Poa annua L. |
| 730 | Arundinella Deppeana Kies | (25) | Eragrostis lugens: folis turcidis |
| 731 | — " — " | (26) | E. sanson 1442. |
| 734 | — " — " | (27) | Elymus virginicus L. |
| | | (28) | Schizachyrium condensatum HBK. |